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HISTORY OF THE GREAT WAR

BASED ON OFFICIAL DOCUMENTS

MEDICAL SERVICES.
GENERAL HISTORY

VOL. III

MEDICAL SERVICES DURING THE OPERATIONS ON THE WESTERN FRONT IN 1916, 1917 AND 1918; IN ITALY; AND IN EGYPT AND PALESTINE.

BY

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ABBREVIATIONS.

A.A.M.C.	..	Australian Army Medical Corps.
A.D.G.	..	Assistant Director-General.
A.D.M.S.	..	Assistant Director of Medical Services.
A.D.R.T.	..	Assistant Director of Railway Transport.
A.D.S.	..	Advanced Dressing Station.
A.D.Tn.	..	Assistant Director of Transportation.
A.G.	..	Adjutant-General.
A.M.S.	..	Army Medical Service.
A.O.C.	..	Army Ordnance Corps.
A.Q.M.G.	..	Assistant Quartermaster-General.
A.S.C.	..	Army Service Corps.
A.T.	..	Ambulance Train.
A.V.C.	..	Army Veterinary Corps.
B.R.C.S.	..	British Red Cross Society.
C.A.M.C.	..	Canadian Army Medical Corps.
C.A.S.C.	..	Canadian Army Service Corps.
C.C.H.	..	Combined Clearing Hospital.
C.C.S.	..	Casualty Clearing Station.
C.F.A.	..	Cavalry Field Ambulance.
C.M.D.S.	..	Corps Main Dressing Station.
C.P.	..	Collecting Post.
C.W.W.S.	..	Corps Walking Wounded Station.
D.A. & Q.M.G.		Deputy Adjutant and Quartermaster-General.
D.A.D.M.S.	..	Deputy Assistant Director of Medical Services.
D.D.M.S.	..	Deputy Director of Medical Services.
D.D.G.	..	Deputy Director-General.
D.D.G.A.M.S.		Deputy Director-General, Army Medical Service.
D.D.G.M.S.	..	Deputy Director-General of Medical Services.
D.G.	..	Director-General.
D.G.A.M.S.	..	Director-General, Army Medical Service.
D.G.M.S.	..	Director-General of Medical Services.
D.M.S.	..	Director of Medical Services.
D.R.T.	..	Director of Railway Transport.
D.Tn.	..	Director of Transportation.
E.M.O.	..	Embarkation Medical Officer.
E.P.I.P.	..	European Privates' Indian Pattern Tent.
F.A.	..	Field Ambulance.

ABBREVIATIONS—*continued.*

F.A.N.Y.	..	First Aid Nursing Yeomanry.
G.A.R.	..	Groupe d'Armées de Reserve.
G.H.Q.	..	General Headquarters.
G.O.C.	..	General Officer Commanding.
G.R.O.	..	General Routine Order.
G.S.O.	..	General Staff Officer.
I.G.C.	..	Inspector-General of Communications.
I.M.S.	..	Indian Medical Service.
I.S.M.D.	..	Indian Subordinate Medical Department.
L. of C.	..	Lines of Communication.
M.A.C.	..	Motor Ambulance Convoy.
M.D.S.	..	Main Dressing Station.
M.O.	..	Medical Officer.
M.T.	..	Mechanical Transport.
N.C.O.	..	Non-Commissioned Officer.
N.Y.D.N.	..	Not yet diagnosed (nervous).
N.Z.M.C.	..	New Zealand Medical Corps.
O.C.	..	Officer Commanding.
O.R.	..	Other Ranks.
P.B.	..	Permanent Base.
P.D.M.S.	..	Principal Director of Medical Services.
P.U.O.	..	Pyrexia of uncertain origin.
Q.A.I.M.N.S.		Queen Alexandra's Imperial Military Nursing Service.
Q.M.G.	..	Quartermaster-General.
R.A.F.	..	Royal Air Force.
R.A.M.C.	..	Royal Army Medical Corps.
R.A.P.	..	Regimental Aid Post.
R.E.	..	Royal Engineers.
R.H.A.	..	Royal Horse Artillery.
R.H.G.	..	Royal Horse Guards.
R.N.	..	Royal Navy.
R.P.	..	Relay Post.
R.T.O.	..	Railway Transport Officer.
S.A.M.C.	..	South African Medical Corps.
S.M.O.	..	Senior Medical Officer.
S.O.	..	Sanitary Officer.
T.A.T.	..	Temporary Ambulance Train.
T.F.	..	Territorial Force.
V.A.D.	..	Voluntary Aid Detachment.
W.W.C.P.	..	Walking Wounded Collecting Post.
Y.M.C.A.	..	Young Men's Christian Association.

PREFACE.

THE chapters in this volume have been compiled mainly from the War Diaries and Official Despatches, but owing to many of the former being missing, a considerable amount of information in connexion with the chapters on the medical services in Egypt and during the Sinai and Palestine operations has been obtained from officers who held administrative medical appointments during these operations, chiefly from Major-General Sir R. Ford, who was the Director of Medical Services in Egypt, from Sir R. Luce and from Lieut.-Colonel J. J. Abraham, the Assistant Director of Medical Services on the Palestine Lines of Communication.

The majority of the small photographs in the text, illustrative of various situations of divisional medical services on the Western Front, have been obtained from Captain R. T. Bruce, who served with a field ambulance of the 51st (Highland) Division. Several of the photographs in the text of the preceding volume were also obtained from this officer.

The other photographs are from official sources, several of them, notably those in the chapter on the Medical Services in Italy, having been supplied by Lieut.-Colonel F. S. Brereton, who visited areas of operation with a view to obtaining material for the Imperial War Museum and the Medical History of the War.

The compiler is again deeply indebted to Brig.-General J. E. Edmonds, the Director of the Military Branch of the Historical Section of the Committee of Imperial Defence, for his valuable assistance in reading through the manuscript.

The limitations of time and space, which had been imposed for the completion of the Medical History of the War, made it difficult to introduce incidents that would render this and other volumes more attractive to the general reader. All that has been attempted therefore has been to provide a basis on which those who are desirous of studying more closely the medical situation during the various battles and phases of the war may be able to reconstruct with the aid of the maps the chief features of the work of the medical services.

General Staff maps, 1 in 250,000, of the Western Front, will be found in Volume II of the General History of the Medical Services.

August 1923 W. G. M.

CHAPTER I.

MINOR ACTIONS IN 1916.

IN addition to the major operations during the period of trench warfare in 1915, described in the preceding volume, the medical services were actively engaged in various minor operations in the southern area of the Ypres Salient and on the Vimy Ridge in the earlier months of 1916. The following is a short account of those minor actions, which took place before the battles of the Somme in the later months of the year

Actions of the Bluff.

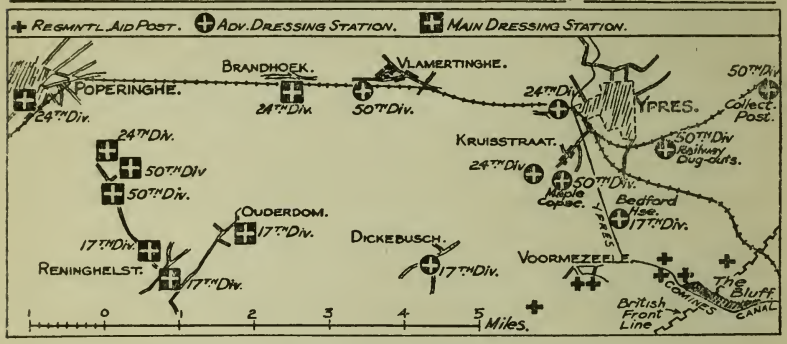
During the night of the 14th/15th February 1916 the enemy exploded a mine on the front of the 17th Division at the Bluff, north of St. Eloi ; five sections of trench were lost. Fighting was continued on the 16th February, but the counter-attacks made to regain the lost ground were unsuccessful. Operations then died down until the 1st March, when the 8th Brigade of the 3rd Division, with four medical officers and 156 stretcher bearers and 11 cars, was transferred to the Vth Corps to make a combined attack with the 17th Division on the Bluff. The attack was made at 4.30 a.m. on the 2nd March and the lost ground retaken. Fighting was continued until the 3rd March, when the situation again became normal.

The weather was variable and generally cold, with high winds and occasional rain.

The medical arrangements worked smoothly and well, but with considerable losses amongst the personnel. The stretcher bearers had great difficulty in bringing back the wounded from the regimental aid post and the advanced dressing station at Bedford House, a distance of one and a half to one and three-quarters of a mile, the only approach being across open country which was exposed to heavy shell-fire ; in fact, at times bearers attempting to get across were fully employed in bringing back their own wounded comrades. The stretcher bearers worked steadily day and night and were reinforced by the four officers and 156 other ranks of the 3rd Division field ambulances. One of the stretcher bearers was killed and sixteen wounded. The motor ambulance cars ran up through Ypres and down the Lille road to Bedford House. They continued running both night and day under frequent

and heavy shell-fire. Four of the ambulance cars were damaged by shell-fire, and four of the drivers wounded. The positions of the various medical posts are shown on the following sketch map.

POSITION OF MEDICAL UNITS DURING ACTIONS AT THE BLUFF, MARCH–APRIL 1916.



In these operations the benefit of the steel helmet, which was by this time being issued to the troops, was especially brought to notice. Twenty-six cases came under observation, in eight of which the helmet had been pierced. In one case a shrapnel bullet had penetrated the helmet. It was found arrested in the metal, and had produced no wound. In twelve cases the helmets had evidently sufficient stopping power to prevent a fatal result. In six cases the helmet had been badly dented but no injury had been caused.

At an advanced dressing station of the 17th Division a record had been kept of the proportion of lying, sitting and walking cases received between 4 a.m. on the 2nd March and 4 a.m. on the 5th March. The record is of value. It showed that the proportion was 240 lying, 438 sitting and 427 walking cases.

There were several casualties from air raids. During one of these air raids on the 18th February 1916 a bomb was dropped in the Wippenhoek area on the divisional rest station of the 50th Division.

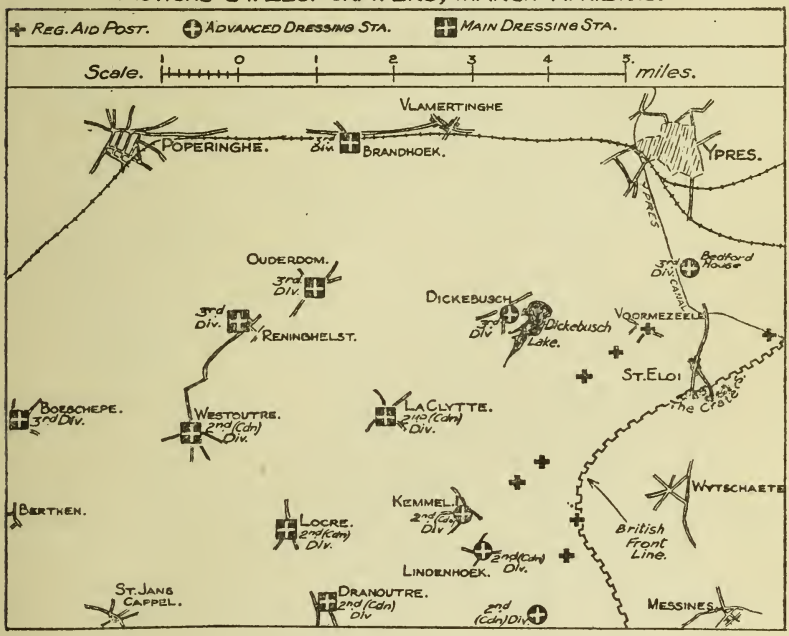
Actions of St. Eloi Craters.

Between the 27th March and 16th April 1916 there was continual fighting in the vicinity of St. Eloi. Several mines had been exploded successfully on the 3rd Division front in the early morning of the 27th March and about 160 prisoners captured.

The 3rd Division continued to hold the positions captured until the 5th April, when they were withdrawn to a rest area of the Vth Corps on relief by the 3rd Canadian Division. This division was attacked on the night of the 5th/6th April, and some of the ground which had been taken by the 3rd Division was lost. Fighting was continued then in this area until the 16th April.

The following sketch map indicates the positions of the medical units during these operations.

MEDICAL SITUATION 3RD DIV. AND 2ND (CDN) DIV.
ACTIONS ST. ELOI CRATERS, MARCH–APRIL 1916.



The wounded admitted to the field ambulances of the Vth Corps between the 27th March and 5th April 1916 numbered 1,290, of whom 523 were admitted on the 28th March, and 129 on the following day.

The 2nd Canadian Division was at the time on the immediate right of the 3rd Division, and was the only Canadian division that took part in the first phase of the operations.

The 3rd Canadian Division, which took over the 3rd Division front on the 5th April, had arrived in France without its field ambulances, but each of the other two divisions of the Canadian

Corps, the 1st and 2nd Canadian Divisions, carried on with only two field ambulances each and transferred their third field ambulance to the 3rd Division. Casualties in the Canadian Corps between the 1st and 16th April 1916 were as follows :—

1st Canadian Division	281
2nd Canadian Division	917
3rd Canadian Division	206
Total	1,404

The largest number occurred on the 7th April, when 370 wounded were admitted into the field ambulances.

German Attack on Vimy Ridge.

On the 15th May 1916 the 25th Division exploded three mines in front of its trenches in the Vimy Ridge area and occupied the craters and part of the German trench system in that area. This was followed on the afternoon of the 21st May by a German counter-attack, preceded by artillery bombardments during which lachrymatory shells were used, the effects of them being felt about three miles behind the front line. The counter-attack was made against the junction of the First and Third Armies between the Lens–Arras road in front of Neuville St. Vaast, to the south-east of Souchez.

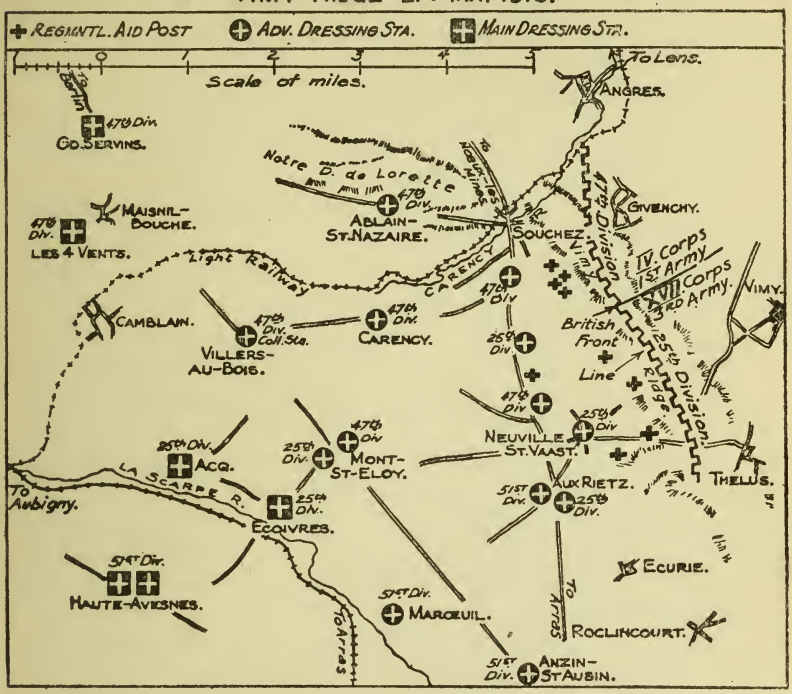
The 25th Division of the XVIIth Corps (Third Army) occupied the right sector in this area, and the 47th Division of the IVth Corps (First Army) the left sector.

The German counter-attack had been successful in capturing some of the trenches of this line, and on the afternoon of the 22nd May 1916 two brigades of the 2nd Division were sent to assist the 47th Division in an effort to regain the captured trenches on the night of the 22nd/23rd. This attack, however, failed to drive the enemy from the captured trenches, and the 47th Division was relieved by the 2nd Division on the 25th May. Wounded admitted to the field ambulances during these operations were as follows :—

Division.	22nd.	23rd.	24th.	25th.
47th Division	—	576	256	384
2nd Division	—	36	195	30
25th Division	—	288	97	38
Totals	—	900	548	452

The positions of the medical units are shown in the following sketch map.

POSITION OF MEDICAL UNITS DURING GERMAN ATTACK ON VIMY RIDGE 21ST MAY 1916.



Evacuation proceeded steadily and satisfactorily. There was no incident requiring special record in connexion with these operations, and there were no casualties amongst the medical units.

Battle of Mount Sorrel.

A battle of greater magnitude was fought between the 2nd and 13th June 1916 in the area east of Ypres between the Ypres–Comines Canal and the Ypres–Roulers railway, to which the name of the Battle of Mount Sorrel has been given. The enemy attacked a line held by the 3rd Canadian Division from Mount Sorrel, about 1,000 yards south-east of Zillebeke and Hooge, and captured the trenches. A counter-attack was made by the 1st Canadian Division and the lost trenches were recaptured on the 13th June. The corps engaged was the Canadian Corps, with Colonel G. La F. Foster, who arrived

in France as A.D.M.S. of the 1st Canadian Division, as its D.D.M.S. The casualties were extremely heavy, especially in the 3rd Canadian Division during the first half of the fighting, and in the 1st Canadian Division during the second half, as is shown in the following table of the numbers received into the field ambulances :—

Division.	June 2nd to 8th.	June 9th to 15th.	Total.
1st Canadian	1,360	1,567	2,927
2nd Canadian	391	419	810
3rd Canadian	2,429	273	2,702
Canadian Corps Troops	35	18	53
20th Division	85	—	85
Totals	4,300	2,277	6,577

This total is made up of 227 officers and 6,350 other ranks.

The casualties in the medical services were heavy, Lieut.-Colonel A. W. Tanner, commanding No. 10 Canadian Field Ambulance, being killed, and two other Canadian medical officers missing, a quartermaster of No. 8 Canadian Field Ambulance wounded, and an officer of No. 1 Canadian Field Ambulance evacuated suffering from shell-shock. Four other ranks of the R.A.M.C. or C.A.M.C. were killed, thirty of the C.A.M.C. wounded, and eight attached drivers of the A.S.C. or C.A.S.C. wounded ; two other ranks of the C.A.M.C. were also missing.

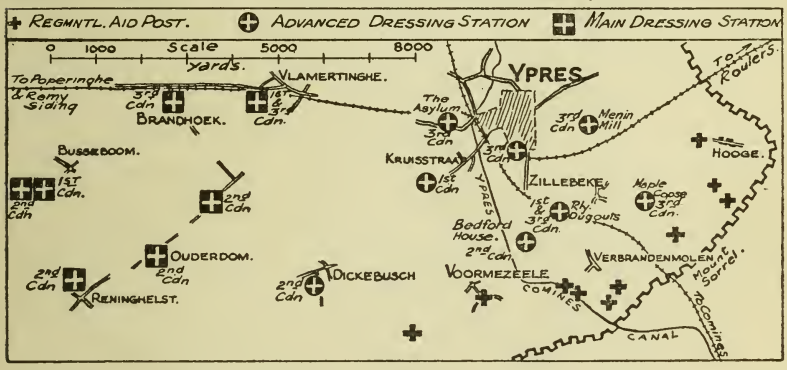
Remy Siding had by this time become a large casualty clearing station centre, with No. 10, No. 17 and No. 3 (Canadian) Casualty Clearing Stations, and the casualties were evacuated from the field ambulances to this centre.

The whole neighbourhood of the advanced dressing station at the Asylum, Ypres, was shelled heavily during the evening of the 2nd June. Several of the motor ambulance drivers and motor cyclists were wounded, and evacuation from the Asylum was being retarded. It was decided, consequently, to clear direct to the main dressing station at Brandhoek, without using this dressing station. It was at this time that Lieut.-Colonel Tanner, who was commanding No. 10 Field Ambulance in the Asylum dressing station, was fatally wounded by a shell while directing the loading of ambulance cars in the courtyard.

The field ambulances of the 3rd Canadian Division, during the first thirty-six hours of this battle, evacuated some 2,000 cases from the fighting area to the main dressing station at Brandhoek, a good record for units so newly arrived in France, one of which had never had any experience of front line work and had never been under fire previously.

The work of the motor ambulance drivers was of a very arduous nature. The roads were heavily shelled and almost impassable in the darkness, but against such odds the men continued taking their cars regularly to and fro, and contributed largely to the successful evacuation of such a large number of wounded in so short a space of time.

POSITION OF MEDICAL UNITS DURING BATTLE OF MOUNT SORREL, JUNE 2ND–13TH 1916.



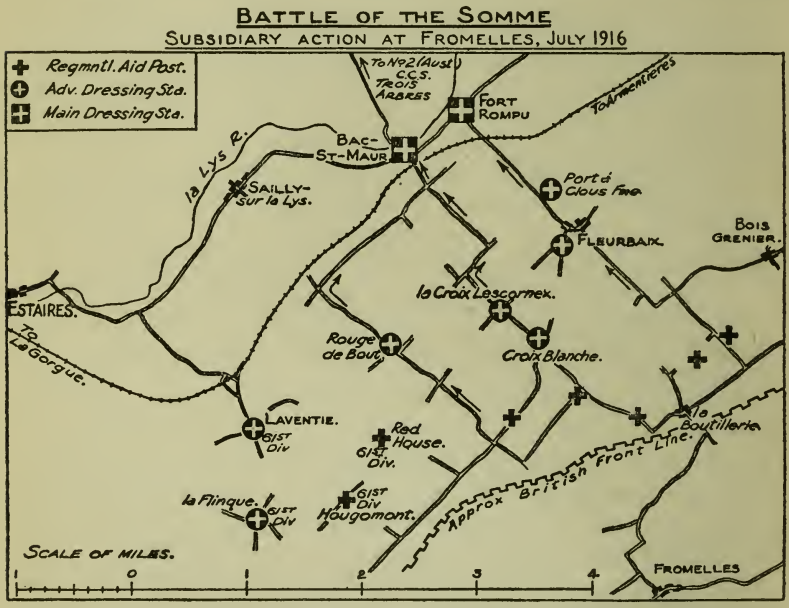
Most of the regimental medical officers had to leave their original aid posts, evacuating all their wounded and taking up on their own initiative new positions further back, where they carried on until the battalions were withdrawn.

The advanced dressing station of No. 10 Canadian Field Ambulance at Maple Copse was under terrific shell-fire. The wounded were cleared from it as rapidly as possible and the advanced dressing station removed to the Menin Mill, on the Menin road, 1,000 yards east of the Menin Gate of Ypres. A new advanced dressing station at Zillebeke dugouts was also established by the same unit along with No. 9 Canadian Field Ambulance, through which some 1,200 to 1,300 cases were passed.

Action at Fromelles.

While major operations were being conducted in the Somme area, the Second and First Armies were engaged in a subsidiary action at Fromelles on the Aubers Ridge front on the 19th July 1916

The attack was made about 6 p.m. by the 5th Australian Division of the IInd Anzac Corps, then in the Second Army, in conjunction with the 61st Division of the XIth Corps of the First Army on its right. The 5th Australian Division had only recently arrived in France from Egypt, where it had been organized, and had taken over the line from the 4th Australian Division on the 12th of the month. The A.D.M.S., Colonel C. H. W. Hardy, had made elaborate arrangements for the attack, as shown in the following sketch of the disposition of his field ambulances. He had two main dressing stations,



one at Fort Rompu, between Bac St. Maur and Armentières, and the other at a factory at Bac St. Maur, with a series of five advanced dressing stations, three of which were advanced a few hours after the attack had been launched to positions further forward. The motor ambulance cars of the division had not arrived by the time of this attack, and 21 motor ambulance cars had to be given to it from No. 14 M.A.C.

Apparently the 61st Division did not advance on the right flank as far as did the 5th Australian Division, with the result that the latter had a very large number of casualties from enfilade fire, several of whom were collected from No Man's Land during the days following.

The total casualties in killed, wounded and missing in the 5th Australian Division amounted to almost 50 per cent. of the troops engaged, the figures being as follows :—

	Officers.	Other ranks.	Total.
Killed	30	476	506
Wounded	45	1,655	1,700
Missing	102	3,224	3,326
Total	177	5,355	5,532

Owing to the small number of casualties on the left flank of the division, and their concentration in the centre and right flank, the work of the field ambulances and stretcher bearers on the right flank became overpowering, and all the available personnel and stretchers of No. 8 Australian Field Ambulance, which had formed posts on the left flank, were transferred to assist on the right flank and centre. The A.D.M.S. of the New Zealand Division was also asked to assist, and sent forward 2 medical officers, 40 other ranks, and 7 motor ambulance cars at 12.30 a.m. on the morning of the 20th.

The officers commanding the field ambulances kept careful records of the nature of the wounds, of which the following statement is of interest as indicating their location :—

Percentage of wounds according to locality.

Head and neck	16·67 per cent.
Thorax	7·93 ,,
Upper extremities ..	31·79 ,,
Abdomen	4·27 ,,
Lower extremities ..	31·00 ,,
Back	2·22 ,,
" Shell Shock " ..	6·12 ,,
	100·00 ,,

The number of wounded for transport, walking, sitting and lying down, was also recorded as follows, between noon on 19th July and 8 p.m. of 21st July :—

Field Ambulance.	Walking.	Sitting.	Lying down.	Total.
No. 8 Australian ..	17	211	358	586
No. 14 ,, ..	453	324	637	1,414
No. 15 ,, ..	347	373	557	1,277
Total ..	817	908	1,552	3,277

The number of wounded admitted to the field ambulances of the 61st Division was approximately 934. Their collection and evacuation were carried out without difficulty and smoothly. The stretcher cases were brought to regimental aid posts at Red House and Hougomont by regimental stretcher bearers on stretchers or wheeled stretcher carriers. The light cases went on foot to a collecting station at Laventie East, and were taken thence in horse ambulance wagons to a walking wounded dressing station at La Gorgue established by a detachment of the 2/3rd South Midland Field Ambulance. From there they were conveyed in cars of No. 13 M.A.C. to No. 9 and the West Riding Casualty Clearing Stations in Lillers, where they entrained. The stretcher cases were taken to an advanced dressing station at Laventie, and were then removed in the motor ambulance cars of the field ambulances to a main dressing station at La Gorgue, where a tent division of the 2/1st and 2/3rd South Midland Field Ambulances was employed. They were conveyed thence by No. 2 M.A.C. to No. 7 and No. 2 London C.C.Ss. at Merville for entraining.

There was no further incident of note during this subsidiary action, and the front over which the attack was made became quiet immediately afterwards.

CHAPTER II.

THE SOMME BATTLES OF 1916.

THE succession of fiercely fought battles which commenced on the British and French front in the area of the Somme and Ancre on the 1st July 1916 lasted until towards the end of November.

The line from which the British divisions launched their attack extended from Maricourt Wood, just north of the Somme, to Gommecourt, where the enemy's trench line formed a small salient. The French held the line on the right from Maricourt Wood to the Somme and south of the Somme. The VIIth Corps of the Third Army was in front of the Gommecourt salient on the left ; but the remainder of the line from Maricourt to Hébuterne was held by the Fourth Army, under General Sir H. Rawlinson, whose D.M.S. was Surg.-General M. O'Keeffe, with Lieut.-Colonel H. B. Fawcus as his A.D.M.S.

A reserve army, under General Sir Hubert Gough, with Surg.-General C. E. Nichol as D.M.S., had its headquarters at Daours on the Somme, between Corbie and Amiens, previous to the battles.* It consisted at the time the battle commenced of the 1st and 3rd Cavalry Divisions and the 2nd Indian Cavalry Division only.

The Fourth Army had five corps in the line. From right to left they were the XIIIth, under Lieut.-General W. N. Congreve, with Colonel G. Cree as his D.D.M.S. ; the XVth, under Lieut.-General H. S. Horne, with Colonel F. Newland as his D.D.M.S. ; the IIIrd Corps, under Lieut.-General Sir W. P. Pulteney, with Colonel B. M. Skinner as D.D.M.S. ; the Xth Corps, under Lieut.-General Sir T. L. N. Morland, with Colonel R. Macleod as D.D.M.S. ; and the VIIIth, under Lieut.-General Sir A. G. Hunter-Weston, with Colonel J. B. Wilson as D.D.M.S.

The VIIth Corps of the Third Army, under Lieut.-General Sir T. D'O. Snow, with Colonel W. T. Swan as D.D.M.S., held the line from which the attack on the Gommecourt salient was to be made.

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* A change in the medical administration of the Reserve, then designated the Fifth, Army, took place on the 1st November, when Colonel B. M. Skinner, from D.D.M.S. of the IIIrd Corps, became the D.M.S. of the Army, with the temporary rank of Surg.-General.

The XIIIth Corps front, with its headquarters at Corbie, extended from the wood north-east of Maricourt to the north of Caftet Wood, and included the village of Carnoy in its area. The divisions holding this line were the 30th (A.D.M.S., Lieut.-Colonel J. D. Alexander) and the 18th (A.D.M.S., Lieut.-Colonel J. Poe).

The line of the XVth Corps extended from the left of the XIIIth Corps south-east of Mametz and Fricourt to a point north of Bécourt about one and a half miles due east of the town of Albert. It was held by the 7th Division (A.D.M.S., Lieut.-Colonel A. W. Hooper) and the 21st Division (A.D.M.S., Colonel C. W. Profeit).

The IIIrd Corps front on the left of the XVth Corps crossed the Albert–Bapaume road just west of La Boisselle to east of Authuille. It was held by the 34th Division (A.D.M.S., Colonel J. J. Gerrard) and the 8th Division (A.D.M.S., Colonel H. N. Dunn).

From there the line of the Xth Corps ran between Thiepval and Thiepval Wood and extended to the right bank of the Ancre just north of Hamel. It was held by the 32nd Division (A.D.M.S., Colonel P. Evans) and the 36th Division (A.D.M.S., Colonel F. J. Greig).

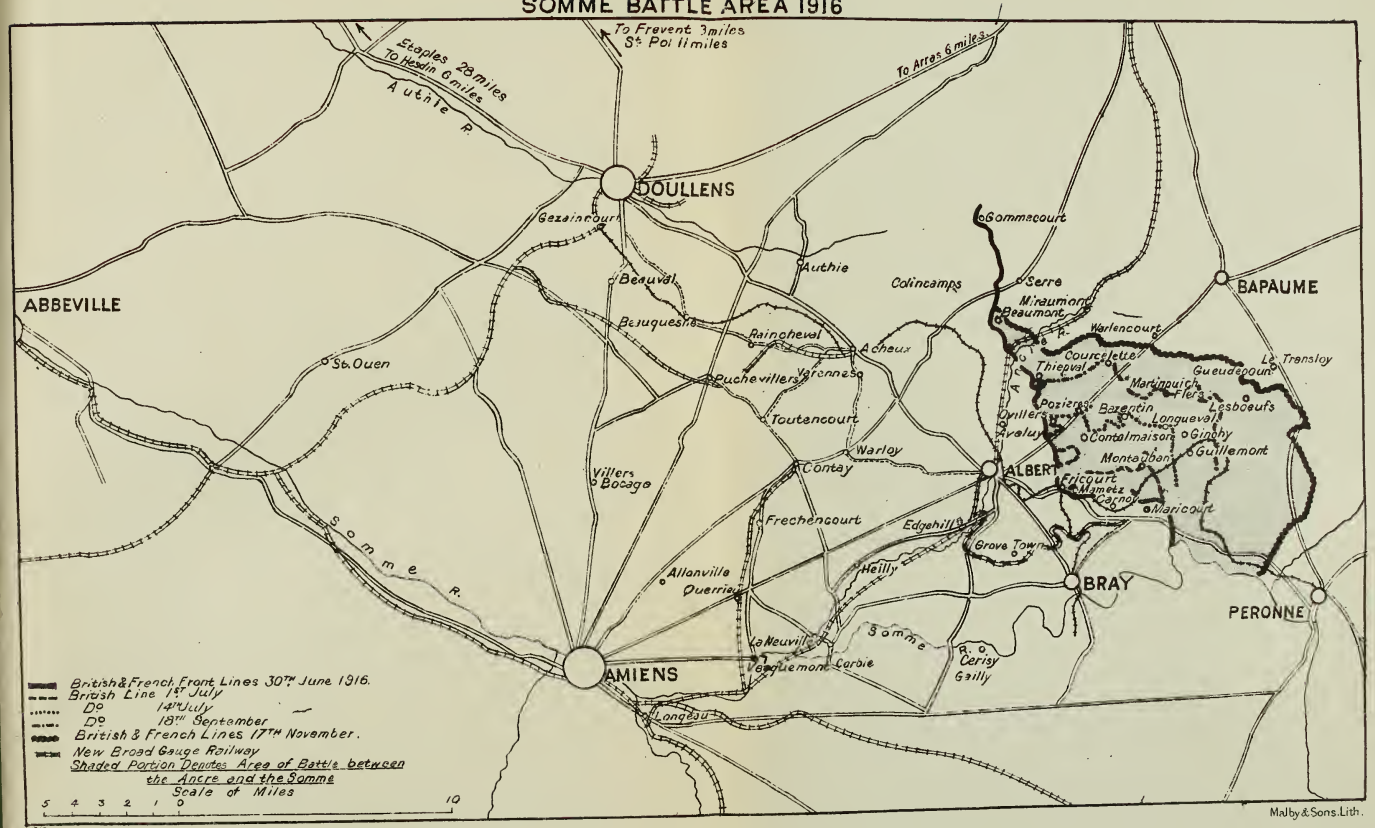
The line of the VIIIth Corps from there ran northwards half-way between Beaumont Hamel and Auchonvillers to the west of Serre just south-east of Hébuterne. It was held by the 29th Division (A.D.M.S., Colonel S. G. Moores), the 4th Division (A.D.M.S., Lieut.-Colonel J. Grech) and the 31st Division (A.D.M.S., Colonel A. W. Bewley).

The VIIth Corps held the trenches opposite Gommecourt to the south of Monchy au Bois. The divisions in the line were the 56th Division (A.D.M.S., Colonel E. G. Browne), the 37th Division (A.D.M.S., Colonel R. W. Wright) and the 46th Division (A.D.M.S., Colonel W. C. Beevor).

Several other divisions were in reserve, namely the 9th, 17th, 19th and 12th, 25th and 49th, and the 48th, in the back areas of the XIIIth, XVth, IIIrd, Xth and VIIIth Corps.

Outline of the Battles.

The attack on the 1st July resulted in the whole system of the enemy trenches in front of the XIIIth Corps and a portion of those between Fricourt and La Boisselle in front of the 21st and 34th Divisions being captured and held; the line was thus extended from the Bois de Favière, north-east of the Bois de Maricourt, round Montauban and Mametz to the


SOMME BATTLE AREA 1916
To Frevent 3miles
St Pol 11miles
Etaples 28miles
To Hesdin 6miles
Authie R.
To Arras 6miles
DOULLENS
Gezaincourt
Beauval
Authie
Colincamps
Gommecourt
Serre
Miraumont
Beaumont
BAPAUME
ABBEVILLE
Bayuquesne
Rainchéval
Acheux
Warlencourt
St. Ouen
Puchevillers
Varennes
Courcelette
Thiepval
Le Transloy
Gueudecourt
Martinpuich
Pozières
Bazentin
Longueval
Delville Wood
Contalmaison
Ginchy
Guillemont
Montauban
Toutencourt
Warloy
Villers Bocage
Contay
ALBERT
Ancre R.
Frechencourt
Edgehill
Grove Town
Allonville
Querrieu
Heilly
BRAY
PERONNE
Somme R.
La Neuville
Corbie
Cerisy
Gailly
AMIENS
Longeau
British & French Front Lines 30th June 1916.
British Line 1st July
Do 14th July
Do 18th September
British & French Lines 17th November.
New Broad Gauge Railway
Shaded Portion Denotes Area of Battle between the Ancre and the Somme
Scale of Miles
5 4 3 2 1 0 10
Malby & Sons. Lith.
1218.

south of Fricourt, and from the north of Fricourt in a salient towards the outskirts of Contalmaison to the south of La Boisselle. A small salient was also made between La Boisselle and Ovillers la Boisselle. Attacks which had been made on Fricourt, La Boisselle, Ovillers la Boisselle, Thiepval, Beaumont Hamel and Gommecourt failed to attain their objectives.

Between the 2nd and 13th July the fighting was continued until the line was advanced to the edge of Trones Wood and along the north of Bernafay Wood, Caterpillar Wood and Mametz Wood. Contalmaison and Ovillers la Boisselle were also captured and the line continued north of these villages to the original line east of Authuille Wood.

A second advance was made on the 14th July to Delville Wood, and included the capture of Longueval, Bazentin le Grand and Bazentin le Petit. Fierce fighting then took place, with varying results, to secure the high ground extending from Guillemont and Ginchy through High Wood to Thiepval. These objectives, with the exception of Thiepval, were gained by the 12th September, and the line then held by the British ran from the west of Combles round Leuze Wood, Ginchy, Delville Wood, through High Wood and westwards along the high ground south of Martinpuich and Courcelette and across the Albert–Bapaume road north of Pozières, whence it bent back to the original line south of Thiepval.

The XIIIth Corps had been withdrawn from the line on the 17th August and replaced by the XIVth Corps, under Lieut.-General the Earl of Cavan, with Colonel Whaite as D.D.M.S. The Divisions in the XIVth Corps at the time were the 56th Division (A.D.M.S., Colonel E. G. Browne), the 6th Division (A.D.M.S., Colonel B. H. Scott) and the Guards Division (A.D M.S., Colonel G. S. McLoughlin).

On the 15th September the XIVth, XVth and IIIrd Corps continued the attack, using tanks for the first time. The high ground and the reverse slopes north of Ginchy, Flers, Martinpuich and Courcelette were gained. The attack was renewed on the 25th and 26th September, when Combles, Morval, Lesboeufs, Gueudecourt and Thiepval were captured. Subsequent operations between that date and the end of October resulted in a line being held from the Bapaume–Peronne road at Sailly Saillisel, and from there westwards between Transloy and Gueudecourt across the Albert-Bapaume road, just south of the Butte de Warlencourt, to Thiepval.

The Reserve Army which, as already noted, was in the neighbourhood of Corbie on the 1st July was moved into the area

of the Xth and VIIIth Corps on the 6th July and took over these corps from the Fourth Army, thus coming in between the Fourth Army and the Third Army. It retained the designation of the Reserve Army until the 1st November, when it was named the Fifth Army.

The Ist Anzac Corps, under Lieut.-General Sir W. Birdwood, with Colonel Manifold, I.M.S. as his D.D.M.S., and composed of the 1st, 2nd and 4th Australian Divisions, was added to the Reserve Army on the 18th July. The New Zealand Division, which had formed part of the Anzac Corps, had been withdrawn from it and joined the XVth Corps. The XIIIth Corps was transferred to General Gough's army on the 17th August, and the Xth Corps was withdrawn to Fourth Army reserve during the same month. During September the 1st Anzac Corps was withdrawn from the Reserve Army and replaced by the Canadian Corps, consisting of the 1st, 2nd and 3rd Canadian Divisions. The Ist Anzac Corps, after a temporary withdrawal from the Somme area, came back to it at the beginning of November and took up a sector on the Fourth Army front.

On the 13th November General Gough's army launched an attack on the Ancre at St. Pierre Divion and Beaumont Hamel. Both positions were captured. When the battles of the Somme and Ancre ceased on the 17th November the line held was thus advanced from north of Thiepval across the Ancre just west of Grandcourt to the north of Beaucourt-sur-Ancre and thence to the original line south-west of Serre.

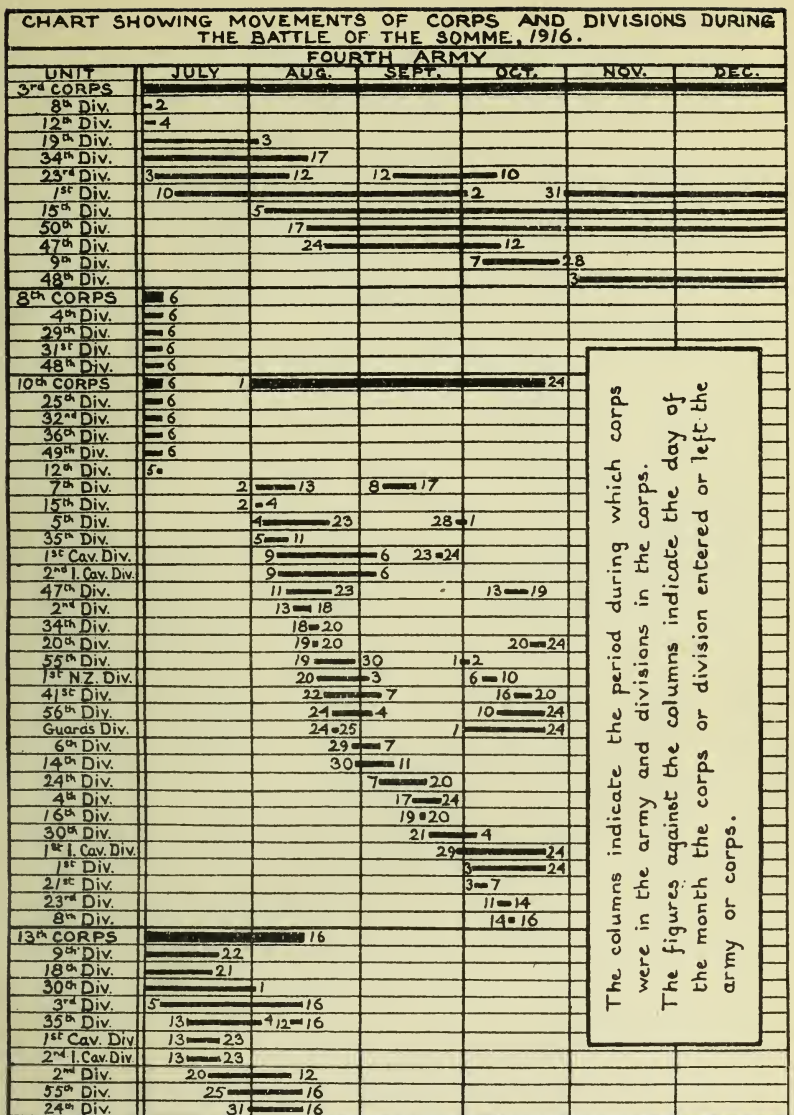
In this succession of battles divisions from all sectors of the British front took part ; exhausted divisions were withdrawn to a reserve corps in rest areas behind the battle front, or to quiet areas on other fronts. Fresh divisions took their place, and an incessant change and interchange of formations went on throughout the whole period.

The several advances are shown on the map, and the fierce character of the attacks and the more or less quiet periods between them are well illustrated in the chart (page 51) showing the number of the wounded who were received into the field ambulances day by day between the 1st July and the 26th November 1916.

The diagrammatic charts also indicate the constant change and interchange of divisions in the various corps engaged and the comparative shortness of the time they were in the fighting line before being withdrawn, a factor which materially affected the medical and sanitary services.

CHART SHOWING MOVEMENTS OF CORPS AND DIVISIONS DURING THE BATTLE OF THE SOMME, 1916.

FOURTH ARMY



The columns indicate the period during which corps were in the army and divisions in the corps. The figures against the columns indicate the day of the month the corps or division entered or left the army or corps.

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CHART SHOWING MOVEMENTS OF CORPS AND DIVISIONS DURING THE BATTLE OF THE SOMME, 1916. CONTINUED.

FOURTH ARMY CONTINUED.

UNIT	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
15th CORPS						
7th Div.	22	14 — 7				
17th Div.	9 23	14				
21st Div.	11 — 19		13 — 2			
38th Div.	5 — 12					
3rd Cr.y. Div.	10 — 31					
33rd Div.	12	30			9	
5th Div.	17 — 3	24				
51st Div.	20 — 7					
14th Div.		13 — 30	12 — 21			
24th Div.		25 — 6				
55th Div.		31	1			
41st Div.			8 — 15			
1st N.Z. Div.			8 — 5			
12th Div.			30 — 22			
30th Div.				1 — 25		
29th Div.				10 — 2		
2nd I. Cav. Div.				24 — 2		
Guards Div.				24 — 9		
1st Div.				24 — 31		
20th Div.				24 — 14		
56th Div.				24 — 25		
4th Div.				30		
60th Div.					3 — 23	
8th Div.					20	
40th Div.					24	
1st ANZAC CORPS	14 — 18			24		
1st Aus. Div.	11 — 18			20		
2nd Aus. Div.	12 — 18			26		
4th Aus. Div.	14 — 18			27		
5th Aus. Div.				17		
9th CORPS	16 — 1					
17th Div.	16 — 22					
21st Div.	20 — 21					
18th Div.	22 — 23					
7th Div.	23 — 1					
9th Div.	23 — 26					
24th Div.	26 — 30					
15th Div.	31 — 1					
CAVALRY CORPS			6 — 28			
1st Cav. Div.			7 — 22			
2nd I. Cav. Div.			7 — 25			
2nd Cav. Div.			13 — 28			
1st I. Cav. Div.			13 — 28			
3rd Cav. Div.			14 — 21			
2nd CORPS	22					
23rd Div.	— 2					
38th Div.	— 4 13 — 14					
3rd Div.	2 — 4					
8th Div.	3 — 6					
21st Div.	5 — 10					
1st Cav. Div.	6 — 12					
3rd Cav. Div.	6 — 9					
1st Div.	6 — 9					
33rd Div.	9 — 11					
17th Div.	10 — 15					

RESERVE (FIFTH) ARMY

UNIT	JULY	AUG.	SEPT.	OCT.
8th CORPS	6 — 28			
4th Div.	6 — 23			
29th Div.	6 — 26			
31st Div.	6 —			
48th Div.	6 — 14			
35th Div.	6 — 9			
12th Div.	10 — 24			
38th Div.	15 — 28			
25th Div.	22 — 25			
10th CORPS	6 — 31			
25th Div.	6 — 18			
32nd Div.	6 — 16			
36th Div.	6 — 9			
49th Div.	6 — 23			
12th Div.	6 — 10			
35th Div.	10 — 12			
48th Div.	14 — 24			
13th Div.	28 — 31			

The columns indicate the period during which corps were in the army and divisions in the corps.
The figures against the columns indicate the day of the month the corps or division entered or left the army or corps.

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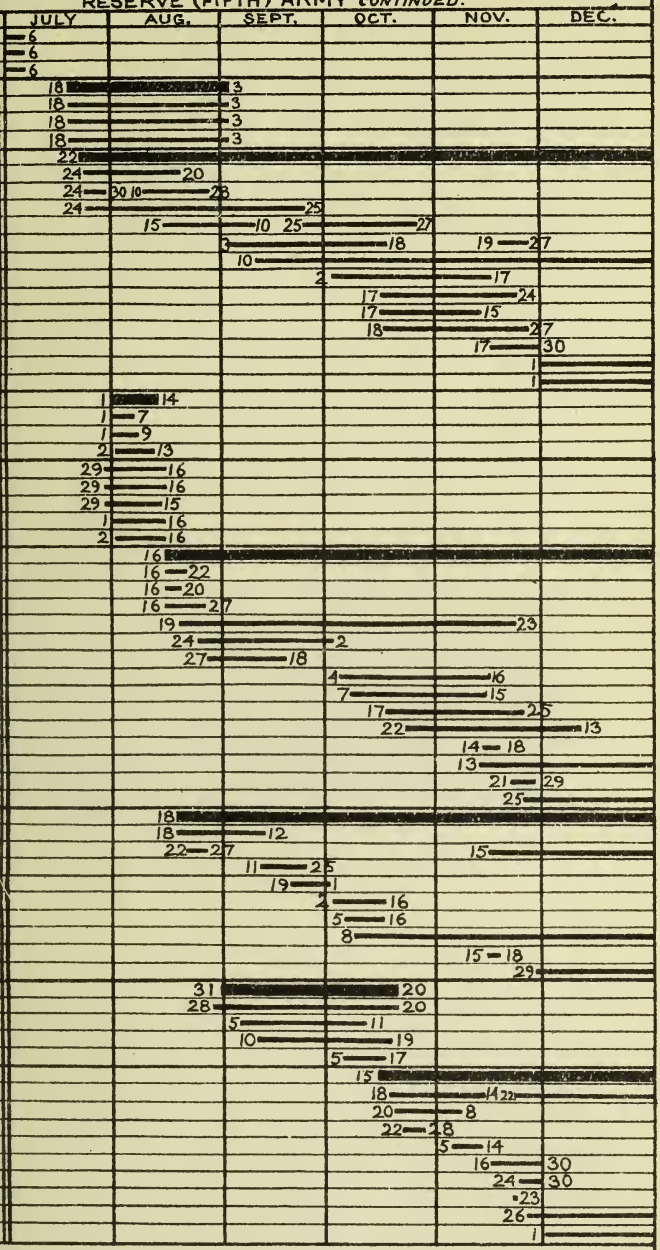
H.M.S.O. Cr.

CHART SHOWING MOVEMENTS OF CORPS AND DIVISIONS DURING THE BATTLE OF THE SOMME 1916 *CONTINUED*

RESERVE (FIFTH) ARMY *CONTINUED.*



The columns indicate the period during which corps were in the army and divisions in the corps.

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The Work of the Medical Services.

It would not be possible within the limits of space to enter into the details of the work of the medical services of each of the divisions. The positions occupied by regimental aid posts, advanced and main dressing stations of one division were handed over to the medical services of the relieving division, and the general situation, as regards divisional medical services, was thus common to all. The regimental and divisional arrangements differed but little from those already detailed in connexion with the battles of 1915, except in so far that the aid posts and advanced dressing stations became more and more elaborate in construction, in the amount of their accommodation and in

Entrance to a regimental aid post near Courcelette.
Ruins of the "Red Château."

the shelter provided, and that greater use than ever was made of tram lines or light field railways or other means of saving hand carriage by the stretcher bearers for bringing back the wounded from aid posts to advanced dressing stations. The collection and evacuation of wounded followed the general principles laid down in the R.A.M.C. Training Manual and in Field Service Regulations, but the details of the system had been perfected and developed as a result of the experience gained in the battles of 1915. The main interest lies in the general arrangements that were made for collecting and clearing from the divisions the large numbers of wounded who came under the charge of the medical services.

The arrangements may best be described by considering each echelon of work separately.

Regimental Medical Service.

The regimental medical service had no new elements introduced into it other than those referred to in previous battles. As a rule the number of battalion stretcher bearers was increased from 16 to 32, and trench stretchers had been authorized in addition to the field stretchers. Regimental aid posts were invariably in dugouts or in sheltered positions in the communication trenches, or in cellars of village houses, many of which had been more or less damaged by shell-fire. As a rule the wounded were brought back down communication trenches

Bringing in a wounded Prussian artillery officer at Contalmaison. Battle of the Somme 1916.

specially allotted for their evacuation, but in many instances these had been damaged and obstructed by shell-fire, and the use of wheeled stretcher carriers for bringing back the wounded above ground was then found of special value. As the line advanced many excellently constructed aid posts were found in the enemy's trenches and used as regimental aid posts and advanced dressing stations in succession.

Field Ambulances.

The work of the bearer divisions of the field ambulances was greatly facilitated in some areas by the use of light field railways or trolley lines, and also by wheeled stretcher carriers. Enemy prisoners of war, in their transit to the rear from the

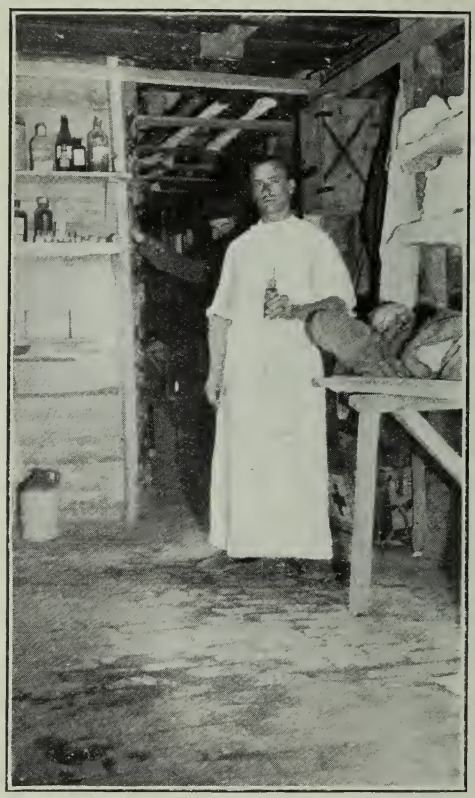
positions where they were captured, helped to a considerable extent to carry wounded back. The stretchers were replenished by the system adopted in the battle of Loos, that is to say they were sent up to the field ambulances by the motor ambulance convoys from dumps maintained at the casualty clearing stations.

With regard to the positions of advanced dressing stations, main dressing stations, and walking wounded collecting posts, the factor which chiefly dominated the arrangements was the width of the front occupied by divisions and corps. Some of these fronts were exceptionally narrow—for example, the front

Entrance to the advanced dressing station at Bouzincourt.
Battle of the Somme 1916.

occupied by the XIIIth Corps on the 1st July with two divisions in line had a width of about one and a half miles only, and that of the IIIrd and Xth Corps about two miles. The XVth Corps had a wider front, while the VIIIth Corps, which had three divisions in line, had a front of about four miles. Consequently, in preparing for the battle, the XIIIth Corps with its narrow front arranged to have only one advanced dressing station, one walking wounded collecting station, and one main dressing station for the corps, these posts being formed by the field ambulances of the divisions engaged. The advanced dressing station of this corps was at farms on the road between Bray and Maricourt ; the collecting post for walking wounded being further down the road and just north of Bray ; the

corps main dressing station was just south of the road between Bray and Corbie, near the cross roads between Treux on the Ancre and Sailly Laurette on the Somme. This latter position was known as Dive's Copse* and became an important corps main dressing station during the greater part of the operations.



Interior of advanced dressing station at Bouzincourt.
Battle of the Somme 1916.

The other corps of the Fourth Army at the beginning of the operations retained, to a certain extent, the divisional organization of advanced dressing stations and main dressing stations. But the advantages of establishing one large corps unit instead of divisional units, when divisions were operating within a corps on a narrow front, were so well brought out during the

* Named after Captain Dive, R.A.M.C., No. 96 Field Ambulance, who was the first officer in command of this main dressing station.

work of the medical services in the XIIIth Corps in the first phase of the battle, that the Fourth Army adopted the system for all its corps, and the Director-General for Medical Services emphasized this in a memorandum of the 25th July 1916, in which he issued an instruction to Ds.M.S. of Armies that when corps were operating on a narrow front the work of the main dressing stations should be concentrated, as far as possible, at some suitable central place in the corps area, and, in order to maintain continuity of command and organization, the commanding officer of one of the field ambulances, with the quartermaster, sergeant-major, and a clerk, should remain in

Field ambulance at Red Cottage, Fricourt. Battle of the Somme 1916.

charge and not be changed so long as his field ambulance remained in the corps, although it might be withdrawn with its division to some other position in the area.

Consequently the corps main dressing stations in the latter part of July were at Dive's Copse for the XIIIth, on the right bank of the Ancre, between Buire and Dernancourt, for the XVth, and at Albert for the IIIrd Corps. They remained in that position during August, with the exception of the main dressing station of the IIIrd Corps, which, with its walking wounded collecting post, had to be withdrawn from Albert to the neighbourhood of Laviéville. In the middle of September Dive's Copse was closed as a main dressing station position and moved forward to the Bray–Maricourt road, and

the main dressing station of the XVth Corps was transferred to Bécordel-Bécourt, between Fricourt and Albert.

The positions of the main dressing stations of the XVth Corps at the beginning of the battle on the 1st July were at Morlincourt and Mericourt l'Abbé, and of the IIIrd Corps at Laviéville, Millencourt and Hénencourt. The main dressing stations of the Xth Corps were at Warloy and Forceville, and of the VIIIth Corps at Bertrancourt, Louvencourt, Bus les Artois and Couin.

Advanced operating centres were established by field ambulances of the Xth Corps in Warloy and of the VIIIth Corps in

Advanced dressing station of a field ambulance in a shell hole at Fricourt. Battle of the Somme 1916.

Authie, with special surgical teams for the purpose of immediate operations on abdominal wounds and other injuries. The surgical and nursing staffs of these operating centres, however, were not moved with the field ambulance to which they were attached for administrative purposes. In the case of the advanced operating centre at Authie, it was later on considered desirable to place it for administrative control under a casualty clearing station instead of under a field ambulance. During July as many as three operating surgeons and nine nursing sisters were on duty at the operating centre in Warloy. It occupied a small but well-built civil hospital with 75 beds, supplemented by accommodation for 375 other wounded in tents, huts and other buildings. It was taken over by the

medical services of the IInd Corps on the 24th July from the Xth Corps ; and on the 1st August a detachment of a casualty clearing station (2/1st South Midland) was placed in charge of it by the D.M.S., Reserve Army.

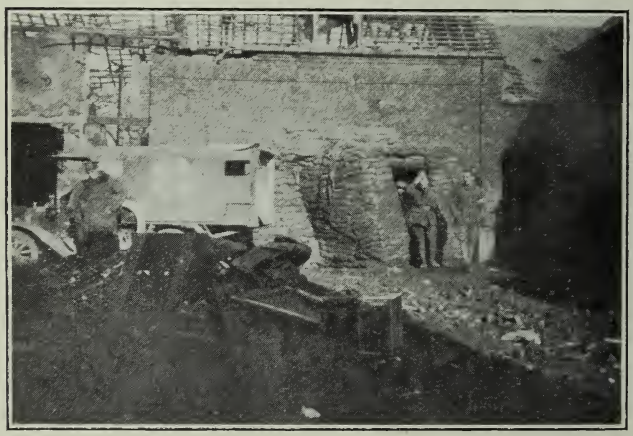
The lying down wounded and more severely wounded amongst the sitting-up cases were received into the main dressing stations, with the exception of those that were sent direct by advanced dressing stations to these advanced operating centres, but with regard to the lightly wounded, some special arrangements were made previous to the battle throughout the whole of the Fourth Army area with the object of utilizing certain lines of railway for conveying them to the casualty

Field ambulance cars near Fricourt. Battle of the Somme 1916.

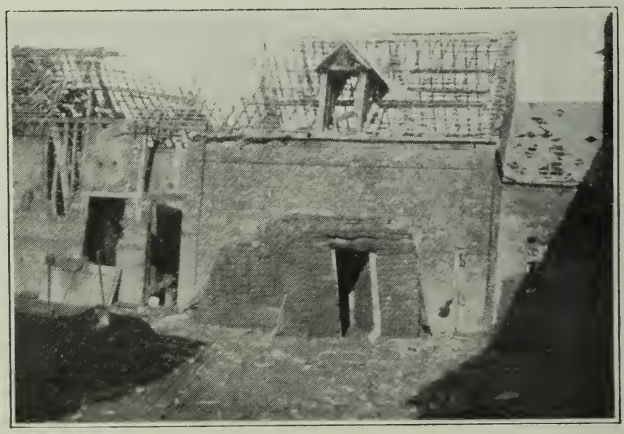
clearing stations. One broad-gauge strategical line had been constructed from Vecquemont on the main line between Longeau and Albert northwards through Fréchencourt to Contay, and another from Candas on the Doullens–Amiens line eastwards through Puchevillers and Clairfaye to Acheux. A narrow-gauge railway ran from Gézaincourt, one of the stations on the Doullens–Amiens line of railway, through Beauval to Acheux and onwards to Albert.

Consequently, in order to utilize these lines of railway for lightly wounded, the IIIrd Corps established a large collecting post and rest station for lightly wounded at Fréchencourt, where they were entrained for the C.C.S. at Vecquemont ; the Xth Corps a similar post at Vadencourt, near Contay,

The collecting post of a field ambulance at Auchonvillers before protection by sandbags.



The same collecting post in process of being protected by sandbags.



The same collecting post after protection by sandbags.

and at Clairfaye, where walking wounded were collected for entraining at Acheux ; and the VIIIth Corps one at Acheux.

In the later phases of the battles a broad-gauge strategical railway, which had been constructed from Dernancourt to Maricourt, was also used for clearing lightly wounded from corps collecting posts that had been formed in the neighbourhood of Carnoy and Maricourt.

When the front of the Fourth Army, owing to the area north of Albert having been taken over by the Reserve Army on

The collecting post at Auchonvillers after being shelled.

the 6th July, was contracted approximately from Contalmaison to a line facing Guillemont and Trones Wood, a distance of between four and five miles, the three corps occupying that front at the time, namely, the XIVth, XVth and IIIrd, had their walking wounded collecting posts respectively at Bronfay Farm on the Bray–Maricourt road, at Bécordel-Bécourt, and at Albert. The IIIrd Corps retained their slightly wounded collecting station at Fréchencourt, and the Reserve Army similar stations at Vadencourt, Clairfaye and Acheux. The walking wounded collecting post

at Albert, however, became unsafe on account of enemy shell-fire, and was withdrawn to a position near Laviéville on the Albert road.

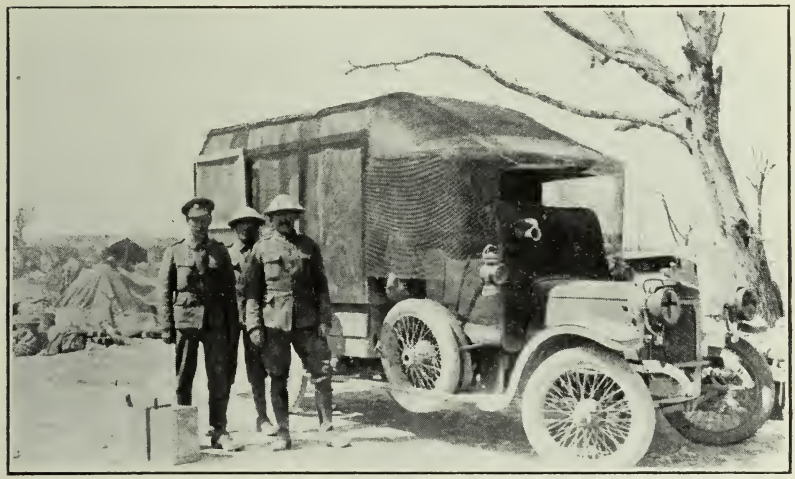
Road from Fricourt to Contalmaison. Battle of the Somme 1916.

Advanced dressing station at Contalmaison. Battle of the Somme 1916.

By the middle of September the walking wounded collecting station of the IIIrd Corps was advanced to Fricourt, and that of the XIVth Corps to the neighbourhood of Carnoy. The IIIrd

Corps then closed its lightly wounded collecting station at Fréchencourt, but was again obliged to withdraw the post at Fricourt to Laviéville.

The collection of wounded by the field ambulances from the regimental aid posts to their advanced dressing stations was either by hand carriage, on wheeled stretchers, or on trolley lines, but occasionally horsed wagons and motor ambulance cars were able to go by night to some of the aid posts or to their neighbourhood. In some instances all these methods of carrying wounded back were employed on one line of evacuation ; for example, in the fighting around Courcelette, wounded



"Armoured" motor ambulance car at Fricourt.
Battle of the Somme 1916.

were carried part of the way on trolley lines to the Albert–Bapaume road at Pozières, and transferred there to horsed wagons or ambulance wagons, or carried further down the valley towards Contalmaison by trolley lines or hand carriage. The work of the bearers in this particular sector was especially heavy, as in places they had to carry the wounded a distance of some 2,000 yards before being able to place them either on wheeled vehicles or on trolley lines. From the advanced dressing stations to the lightly wounded collecting posts the horsed wagons of the field ambulances, or lorries and charabancs, and in some cases trolley lines, were used, but considerable use was also made of the newly constructed strategical railways, especially for bringing back the lightly wounded from

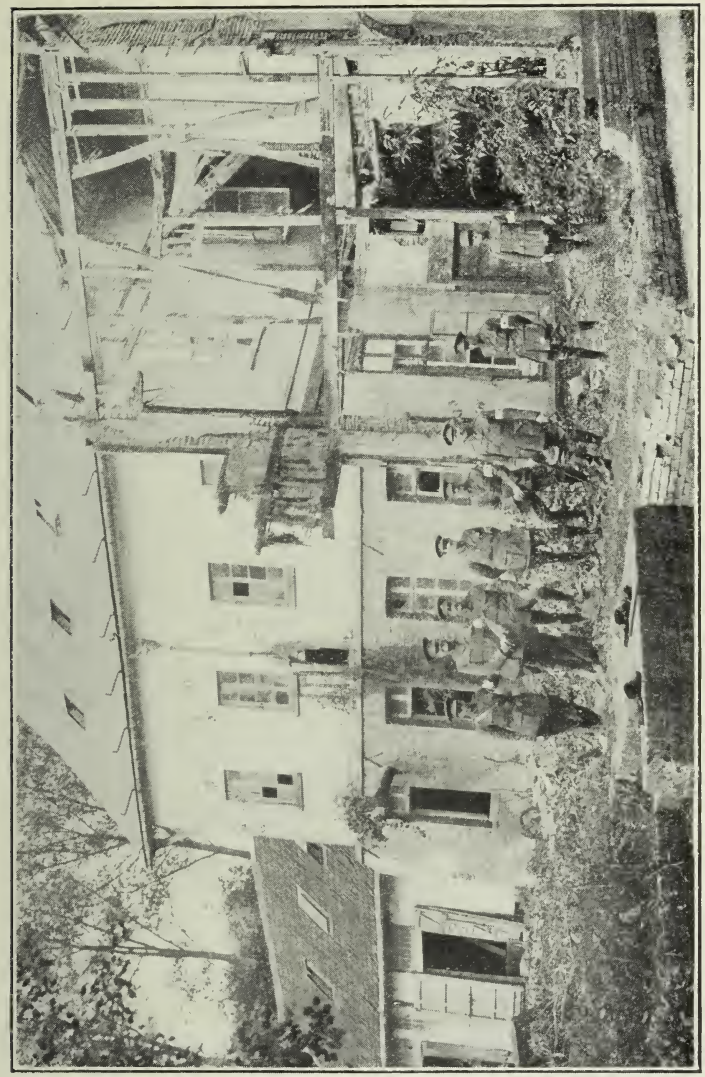
the walking wounded collecting posts near Carnoy, Vadencourt and Fréchencourt to the casualty clearing stations. From Clairfaye and Acheux in the northern area the narrow-gauge railway was used.

The ground over which the advance had been made had become impossible for wheeled traffic or new tramway lines during the latter part of October and beginning of November, and the stretcher bearers were then reinforced in some corps, notably the XIVth, by men obtained from Pioneer battalions and from the divisional trains. Up till then the supply of stretcher bearers was adequate so long as the weather continued

"Armoured" motor ambulance car between Fricourt and Contalmaison. Battle of the Somme 1916.

fine. In arranging the relays between Gueudecourt and Longueval, the average carry for each relay was 1,000 yards, and as a rule three relays were required to bring men back to the tramway lines. The time taken depended much upon the weight of the patient, the strength of the bearers, the state of the track as regards mud, and the presence or absence of barrage fire.

The motor ambulance transport of the field ambulances was mainly employed in conveying the seriously wounded and lying down cases from the advanced dressing stations to the main dressing stations, and also direct from the advanced dressing stations to the advanced operating centres or to those casualty clearing stations allotted for the reception of urgent cases.



No. 21 Casualty Clearing Station, La Neuville, near Corbie. Building as taken over by the casualty clearing station.

Casualty Clearing Stations.

Sites for casualty clearing stations had been selected and prepared previous to the battle close to the broad-gauge railway lines, so that ambulance trains could come up direct to the casualty clearing stations and evacuate them without using cars from the motor ambulance convoys.

Two or more casualty clearing stations were grouped on these sites, but carried on their work as independent units, the

No. 21 Casualty Clearing Station, La Neuville, near Corbie. Building as restored by the personnel of the casualty clearing station.

wounded being brought to them in rotation, so that each casualty clearing station had only a limited number of wounded, varying from 150 to 300, admitted to it at one time. This

enabled the surgical work to be carried on more thoroughly and in a more leisurely way than would otherwise have been the case, and also gave the officer in charge and the rest of his staff an opportunity of having the particulars of each case recorded, and proper arrangements made for entraining them on the ambulance trains.

At first the number of casualty clearing stations in the Fourth Army permitted of their being grouped in twos only; thus, in the southern part of the area the positions selected were along the Amiens–Albert line of railway, namely, at Heilly, where Nos. 36 and 38 C.C.Ss. were established, at Corbie and La Neuville, a suburb of Corbie, for Nos. 5 and 21 C.C.Ss., and at Vecquemont, near the junction of the newly constructed broad-gauge railway to Contay, where Nos. 34 and 45 C.C.Ss. were established.

As ambulance trains were not permitted to run at this time on the broad-gauge railway to Contay, no casualty clearing stations were established in this central position, although it was a very desirable and convenient locality for one or more casualty clearing stations. In the northern sector two casualty clearing stations were established at Puchevillers (Nos. 3 and 44), and two in the Citadel at Doullens (Nos. 35 and 11).

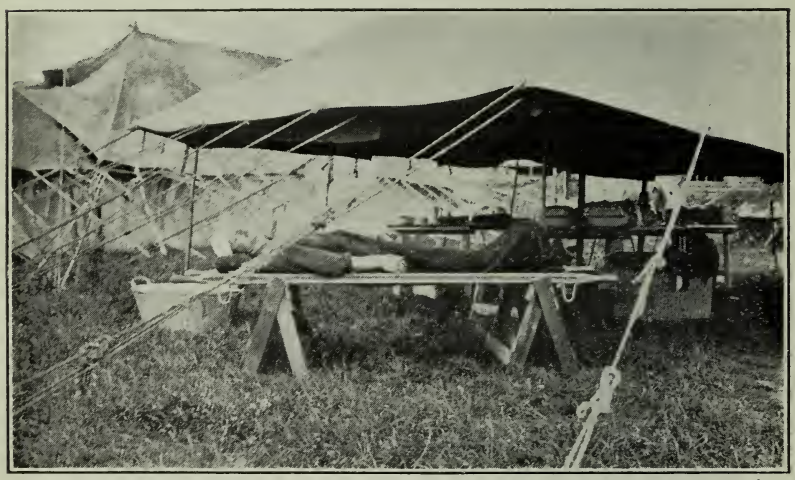
There were single casualty clearing stations at the commencement of the battle at Gézaincourt (No. 29),* Beauval (No. 4), St. Ouen (No. 39) and Amiens (1/1st South Midland).

All of the casualty clearing stations, with the exception of those in the Citadel at Doullens, at Beauval and at Amiens, could be cleared direct to ambulance trains without the intervention of motor transport. No ambulance trains were permitted to load at the railway station at Amiens, although the casualty clearing station there was only one or two hundred yards from the railway station. The patients in it had to be taken by ambulance car for entraining to Longeau, some three miles distant. From Beauval and the Citadel at Doullens they were entrained at Gézaincourt, but subsequently arrangements were made with the Third Army to have the patients in the Citadel taken to Doullens railway station for entraining. Doullens railway station was some distance from the casualty clearing stations and motor ambulance cars or other transport were required to bring the wounded to the trains; but at this

* An officers' hospital was opened in a large château at Gézaincourt, to which a special staff of medical officers and nursing sisters was appointed. It was under the administrative charge at first of No. 29 C.C.S., but after wards of one or other of the casualty clearing stations at Gézaincourt.

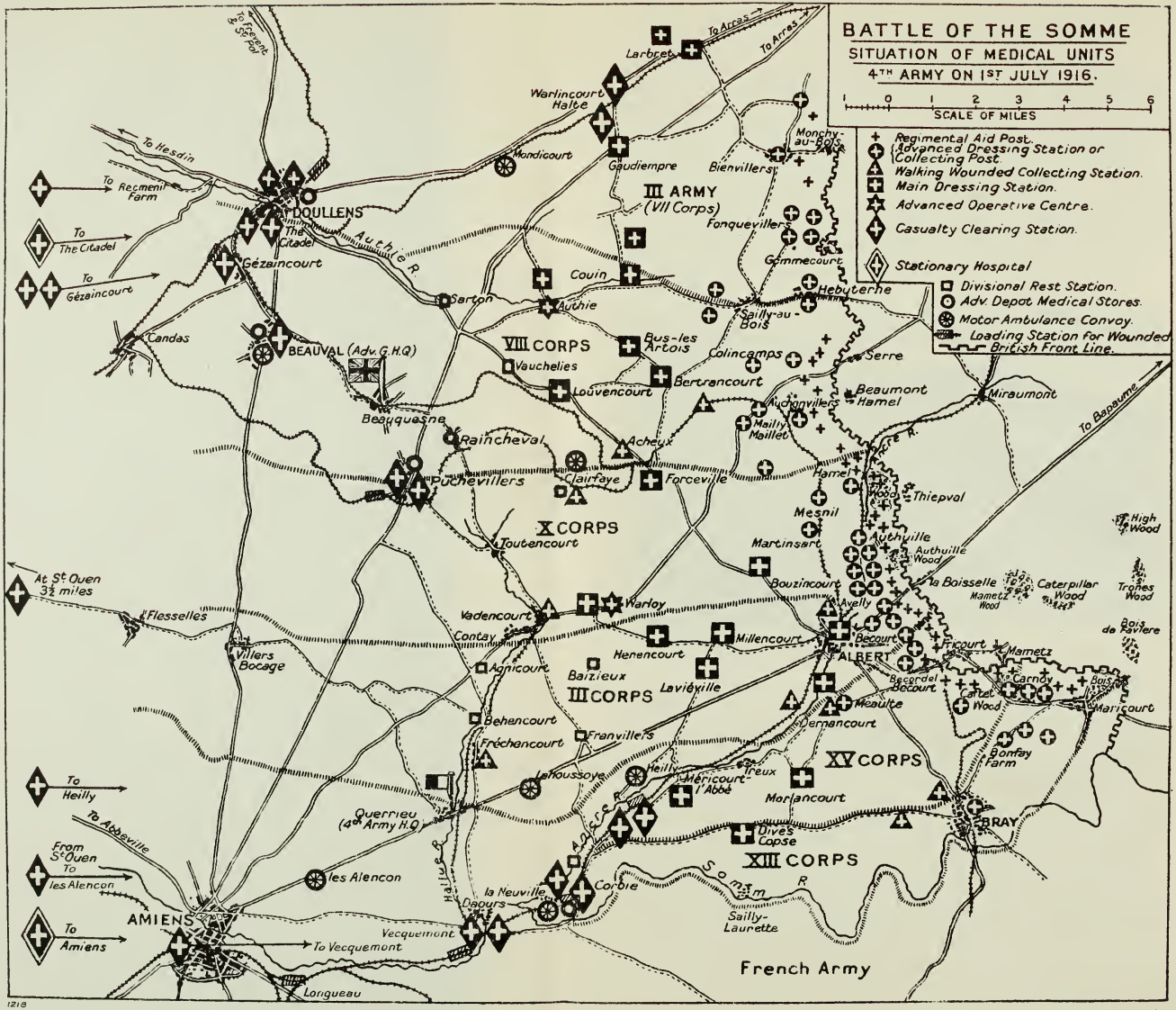
station an excellent refreshment buffet had been established by Miss Boot, with the sanction of the French military authorities, at the time when Doullens was in the French army area. Miss Boot was permitted to carry on this work afterwards when the British took over the area, and was consequently able to do much for the sick and wounded when they arrived at the station pending entraining.

For Indian troops an Indian cavalry field ambulance was opened at the beginning of the operations at Vecquemont, but this was replaced very soon by a section of the Lucknow Casualty Clearing Station.



In a casualty clearing station behind the Somme Front 1916.

The Third Army had two casualty clearing stations in the town of Doullens, Nos. 19 and 41. In preparation for the battle, the Third Army had also prepared a new site for casualty clearing stations on the Doullens–Arras road at a château and in fields near Solerneau, and close to the railway line at the halte for Warlincourt. Two casualty clearing stations were placed there, Nos. 20 and 43, and to these casualty clearing stations, and to the casualty clearing stations at Doullens, the casualties in the attack on Gommecourt Salient were taken. In addition to casualty clearing stations in other parts of the Third Army area there were stationary hospitals in extensive and well-constructed French hospital huts that had been only recently erected at Frévent and St. Pol.



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There were three casualty clearing stations parked in reserve at Etaples, and one of them, No. 47, was brought up to Hesdin in the G.H.Q. area during the last week of June in preparation for the battle. It was under the direct control of the D.G.M.S. It was established in tents on the parade ground there as an intermediate post between the front and the Etaples base, in the event of its being necessary to send wounded to the base by road from casualty clearing stations in the northern area of fighting.

The casualty clearing station at St. Ouen, No. 39, was far back, but was retained there for sick and infectious cases. Similar arrangements were made in meadows some three miles west of Doullens at Recmenil Farm, which at the beginning of the battle was occupied by a field ambulance ; but on the 6th July a casualty clearing station, the 2/1st South Midland, was brought up from those in reserve on the L. of C. and took over the site.

Reinforcements.—Immediately after the first attack the need of additional casualty clearing stations in the area of the Fourth and Reserve Armies became apparent, especially at Gézaincourt, which, from the very first day of the battle, was flooded with the large number of lightly wounded that were brought back to it by the narrow-gauge railway from Acheux. Consequently, No. 49 C.C.S. was hurriedly sent there from the L. of C. without its equipment, in order that its personnel might assist in the work of No. 29 C.C.S. The personnel arrived on the 3rd July, and the remainder of the unit was ordered up on the 6th July. On the 13th July the 1/1st South Midland C.C.S. was moved from Amiens to Vecquemont, its place being taken by the New Zealand Stationary Hospital which had arrived in France from Egypt, and, on the 6th July, the 2/2nd London C.C.S. was also brought up from the L. of C. to Heilly. After the first week of July, therefore, there was a group of three casualty clearing stations at Heilly and at Vecquemont.

The situation of the casualty clearing stations and their number were not altered until August, when it was decided to establish casualty clearing stations at Contay, as permission had then been received for ambulance trains to run on the Contay–Vecquemont line. Consequently, No. 49 C.C.S. was moved on the 12th August from Gézaincourt to Contay, and later on No. 9 C.C.S., on the 14th September, was also transferred there from the First Army. No. 49 C.C.S. was replaced at Gézaincourt by No. 11 C.C.S. from the

Citadel at Doullens, and at the end of July No. 39 C.C.S. was brought up from St. Ouen to Allonville, between Amiens and the headquarters of the Fourth Army at Querrieu, where it continued to be the unit for the reception of sick and infectious cases.

In September and October a general advance of casualty clearing stations was effected. A site had been selected by the side of the new strategical railway line on the plateau between Maricourt and Dernancourt, to which the name of Grovetown was given. Three casualty clearing stations, the 2nd London from Heilly, No. 34 from Vecquemont, and No. 48 from the L. of C. were brought up there between the 10th

No. 45 Casualty Clearing Station at Edgehill, behind the Somme Front.

and 12th September. A similar site near the Amiens–Albert railway line, north of Dernancourt, to which the name of Edgehill was given, also became a new casualty clearing station position, and No. 45 and the 1/1st South Midland Casualty Clearing Stations were brought up to it from Vecquemont, and also No. 13 C.C.S. from the L. of C. The casualty clearing station centre at Vecquemont was thus closed by the middle of September. In October No. 5 C.C.S. at Corbie was moved to Albert, where, however, it was exposed to hostile artillery fire. It was moved to the neighbourhood of Bray to a newly constructed French evacuation hospital.

In the Reserve Army area a new site for three casualty clearing stations was selected near the broad-gauge strategical

BATTLE OF THE SOMME

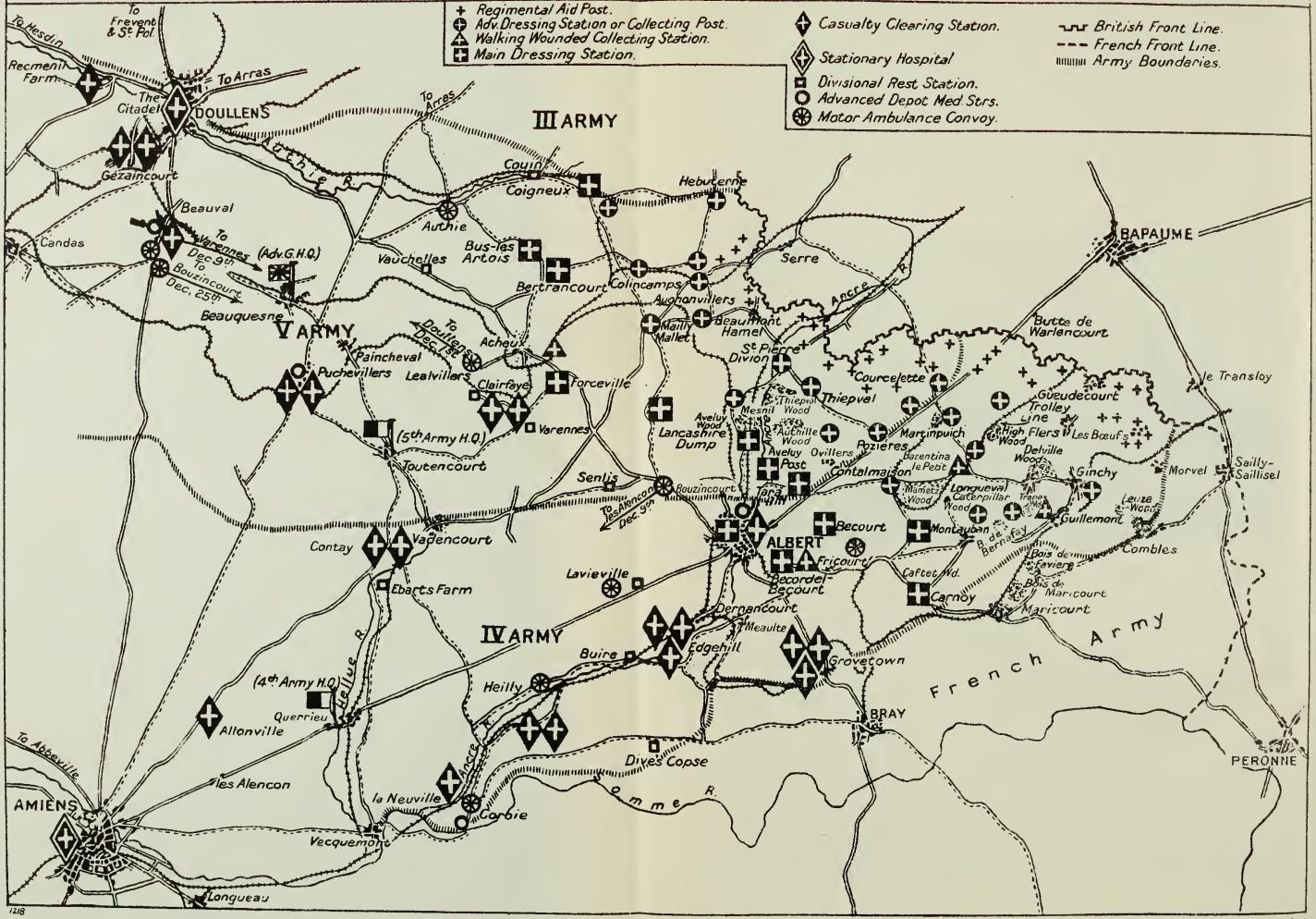
SITUATION OF MEDICAL UNITS OF 4TH & 5TH ARMIES ON NOVEMBER 30TH 1916.

SCALE OF MILES 0 1 2 3 4 5 6 7 8 9 10

+ Regimental Aid Post.
⊕ Adv. Dressing Station or Collecting Post.
△ Walking Wounded Collecting Station.
⊞ Main Dressing Station.

◈ Casualty Clearing Station.
◈ Stationary Hospital
▣ Divisional Rest Station.
○ Advanced Depot Med Strs.
⊛ Motor Ambulance Convoy.

British Front Line.
French Front Line.
Army Boundaries.



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railway at Varennes, south of Acheux, and in the neighbourhood of Clairfaye. No. 4 C.C.S. from Beauval and No. 11 C.C.S. from Gézaincourt were brought up to it early in October, No. 4 C.C.S. being replaced at Beauval by No. 47 C.C.S. from Hesdin, and No. 11 C.C.S. by No. 3 Australian C.C.S. from the L. of C. Later on, in December, Beauval was abandoned altogether, and its casualty clearing station, too, was brought up to Varennes. In November, No. 35 C.C.S., from the Citadel at Doullens, which remained as the one medical unit there, left the Western for the Macedonian front, and the whole of the accommodation in the Citadel was then taken over on the 13th of the month by No. 3 (Canadian) Stationary Hospital.

Consequently, when the operations on the Somme front ceased, the casualty clearing station situation in the Fourth and Fifth Armies was as follows :—

Fourth Army—

At Grovetown	Three casualty clearing stations.
At Edgehill	Three ,, ,, ,,
At Heilly	Two ,, ,, ,,
At Albert	One ,, ,, station.
At Corbie	One ,, ,, ,,
At Allonville	One casualty clearing station for infectious diseases and other cases not requiring evacuation.
At Amiens	One stationary hospital.

Fifth Army—

At Varennes	Three casualty clearing stations.
At Contay	Two ,, ,, ,,
At Puchevillers	Two ,, ,, ,,
At Gézaincourt	Two ,, ,, ,,
At Recmenil Farm	One ,, ,, station.
At Doullens	One stationary hospital.

No. 19 C.C.S., in the town of Doullens, had also been placed at the disposal of the Reserve Army for the operations on the Ancre in November, but was under the administrative control of the Third Army.

Accommodation and Equipment.—Exclusive of the accommodation for sick and infectious cases at the casualty clearing station at St. Ouen and, afterwards, at Allonville, the casualty clearing stations of the Fourth Army in July could accommodate 9,500 wounded, namely, 2,200 at Heilly, 1,550 at Corbie, 1,600 at Vecquemont, 1,800 at Puchevillers, 1,000 at Gézaincourt, 400 at Amiens, 450 at Beauval, and 500 in the Citadel at Doullens.

In order to provide for the additional work at the casualty clearing stations, an enormous amount of equipment was added not only for medical and surgical purposes, but also in order to provide well equipped beds and hospital comforts for the more seriously wounded, and better shelter and accommodation. Officers commanding casualty clearing stations indented very extensively on ordnance stores for additional equipment, and the Joint Committee of the B.R.C.S. and Order of St. John, which had an advanced store at Recmenil Farm, materially assisted in adding to the comfort of the casualty clearing stations.

Operating theatre in portable hut of a casualty clearing station behind the Somme Front.

Some idea of the extent to which casualty clearing stations expanded in this way may be gathered from the fact that, when the transfer of casualty clearing stations from Vecquemont to Edgehill and Grovetown took place, the number of lorries required to move each of them varied from fifty to one hundred. Thus, No. 45 C.C.S. in moving to Vecquemont had one hundred lorry loads of equipment and material. The equipment alone amounted to 150 tons, not including some huts which had been erected at Vecquemont.* When a casualty clearing station was moved by rail, generally a whole

* Twenty of the lorries carried road metal for making roads. This casualty clearing station had constructed paths and roads at its site in Vecquemont, and took the material up in order to construct similar roads in its new site at Edgehill.

train was required to carry it. As the tonnage of a casualty clearing station according to War Establishments is only twenty-three tons, capable of being carried on eight 3-ton lorries, some idea may be formed of the unwieldy nature of casualty clearing stations during this period. Nevertheless there was little or no delay in moving them, provided lorries and trains were available for the purpose.

Personnel.—The personnel of casualty clearing stations had not been altered from the original War Establishments, with the exception of the addition of nursing sisters and dentists,

Australian wounded being brought to a casualty clearing station. Battle of the Somme 1916.

but it was obvious that with the great increase in the accommodation of the casualty clearing stations, additional personnel would be necessary. These were obtained at first from field ambulances of the reserve divisions of corps, each corps providing two parties of three officers, three N.C.Os. and twenty men. Each of the casualty clearing stations was reinforced by one of these parties. In addition, the VIIIth and Xth Corps detailed two medical officers, two N.C.Os. and eighteen other ranks for duty, under the O.C., No. 29 C.C.S., on the trains running on the narrow-gauge railway between Acheux and Gézaincourt. Each corps had also to detail one officer and fifty men temporarily unfit or permanently unfit for duty in the fighting line to each of the casualty clearing stations for fatigue work and for loading and unloading ambulance cars and ambulance trains.

At the commencement of the battles of the Somme, Surg.-General Sir Anthony Bowlby was stationed at No. 38 C.C.S., Heilly, and acted as consulting surgeon for the group of casualty clearing stations in the southern area of the Fourth Army, while the consulting surgeon of the Army, Colonel T. Sinclair, was stationed at No. 3 C.C.S. at Puchevillers as consulting surgeon for the group of casualty clearing stations in the northern area. Colonel Sir Wilmot Herringham also went from G.H.Q. to No. 36 C.C.S., Heilly, as a consulting physician in connexion with wounds of the chest. Sir Anthony Bowlby returned to G.H.Q. on the 23rd July, and Colonel Sinclair then rejoined the Fourth Army Headquarters at Querrieu. On the 30th August Colonel Maynard-Smith was appointed consulting surgeon to the Reserve Army, but until he took up his duties Sir Anthony Bowlby acted as consulting surgeon to the Army, supervising the surgical work in it from G.H.Q.

In anticipation of the fighting in the Fifth Army on the 13th November, Colonel C. Wallace, consulting surgeon of the First Army, was temporarily attached to the casualty clearing stations at Puchevillers and Contay, and Colonel Maynard-Smith to those at Varennes.

Considerable additions were also made to the personnel of the casualty clearing stations immediately after the initial attack. The D.G.M.S. arranged on the 3rd July for the D.M.S., L. of C., to send fifty emergency stretcher bearers from the R.A.M.C. Reserve Bearer Company at Boulogne to No. 36 C.C.S., fifty to No. 34 at Vecquemont, and forty R.A.M.C. other ranks from No. 29 Field Ambulance, which was then in reserve on the L. of C., to No. 3 C.C.S., followed by twenty nursing orderlies of the same field ambulance to each of the casualty clearing stations at Heilly.

A number of surgical teams, each consisting of one specialist surgeon, one anæsthetist, one nursing sister and one operating room attendant, was sent from the First and Second Armies. On the 2nd July two of these teams were sent to Vecquemont, two to Heilly, one to Amiens, two to Puchevillers and two to Corbie. On the 17th July a still further reinforcement of surgeons was obtained from casualty clearing stations in the Third Army, namely, two for No. 23 C.C.S., two for No. 45 C.C.S. at Vecquemont, and two for No. 36 C.C.S. at Heilly.

The increase in this way of surgical personnel led to a considerable advance in the surgical work performed in casualty clearing stations.* Casualty clearing stations which were only

* See Chapter XI, Surgery of the War, Vol. I.

receiving lightly wounded did not, however, have an addition to their surgical staff. In others the number of medical officers was practically doubled.*

A curious incident occurred in No. 21 C.C.S. at La Neuville, near Corbie, which is of some historical interest. A N.C.O. of the R.A.M.C. on duty with the unit created much excitement by what appeared to be a method discovered by himself of delineating the internal organs by means of electric currents passed through the body. His work was studied by consulting surgeons and others, whom he completely deceived, and notices appeared in medical journals of this apparently important advance in medical science.† Later on, during the battle, he began to produce what appeared to be photographs taken by wireless methods. His photographs showed enemy aeroplanes and airships travelling over Corbie by night at a time when a raid was expected. A still further advance in his activities was made when he announced that he had discovered a method of destroying life at a distance by electric power. He was then given every facility for carrying on his experiments, and eventually he was placed under the direct supervision of the General Staff and their expert electric advisers, in an enclosure at No. 12 Stationary Hospital, St. Pol. The final result was that the whole of his experiments were proved to be fraudulent. The N.C.O. was placed under arrest and tried by court martial.

Disposal of Casualties.—The distribution of wounded and sick to the casualty clearing stations was determined by the D.M.S. of the Army, who issued instructions for the disposal of the wounded as follows :—

Seriously Wounded.

From	XIIIth	Corps to	No. 21	C.C.S.	Corbie.
			No. 45	,,	Vecquemont.
,,	XVth	,,	No. 5	,,	Corbie.
			No. 34	,,	Vecquemont.
,,	IIIrd	,,	No. 36	,,	Heilly.
			No. 38	,,	Heilly.

* On 12th September 1916 the number of medical officers in the Fourth Army casualty clearing stations was as follows :—

Grovetown—2/2nd London C.C.S.	10
No. 34 C.C.S.	12
No. 48 C.C.S. (lightly wounded)	7
Edgehill—No. 45 C.C.S.	12
1/1st South Midland C.C.S.	13
No. 13 C.C.S. (lightly wounded)	7
Heilly—No. 36 C.C.S.	13
No. 38 C.C.S.	13

† See British Medical Journal, Vol. II, 1916, pp. 459, 468 and 565.

From	Xth	Corps to	No. 3	C.C.S.	Puchevillers.
		,,	No. 44	,,	Puchevillers.
,,	VIIIth	,,	No. 4	,,	Beauval.
			No. 29	,,	Gézaincourt.

Lightly Wounded.

From XIIIth and XVth Corps to C.C.Ss., Heilly.
,, IIIrd Corps to C.C.Ss., Vecquemont.
,, Xth and VIIIth Corps to C.C.S., Gézaincourt.

For Urgent Operations (*Abdominal Wounds*).

From VIIIth Corps to Advanced Operating Centre, Authie.
,, IIIrd and Xth Corps to Advanced Operating centre, Warloy.
,, XIIIth and XVth Corps to C.C.Ss., Heilly.

The casualty clearing stations in each group were filled in rotation, as already mentioned. The lightly wounded of the IIIrd Corps were collected at Contay and Fréchencourt and sent to Vecquemont in empty trucks on the broad-gauge railway. Similarly the lightly wounded from the Xth and VIIIth Corps were collected at Acheux and sent to Gézaincourt by the narrow-gauge railway.

Motor Ambulance Convoys.

The motor ambulance convoys were employed chiefly for clearing the seriously wounded. For this purpose a convoy was attached to each corps ; No. 10, with the XIIIth Corps, was parked at the corps main dressing station at Dive's Copse ; No. 27, with the XVth Corps, at Heilly ; No. 21, with the IIIrd Corps, at La Houssoye, on the Amiens–Albert road, but moved in September to the corps main dressing station at Laviéville ; No. 6, with the Xth Corps, at Toutencourt and afterwards at Clairfaye ; and No. 20, with the VIIIth Corps, at Beauval, and afterwards at Bouzincourt, near Albert. An additional motor ambulance convoy, No. 25, was held under the direct control of the D.M.S. of the Army at Les Alençons.

This was the distribution of motor ambulance convoys in the first phase of the battle, but it was found necessary as the operations progressed to reinforce both the Fourth and Reserve Armies with fresh convoys. Consequently a convoy, No. 31, was sent up from the L. of C. in the middle of September to Les Alençons, and took the place there of No. 25, which was moved forward to Corbie in place of No. 10, transferred

to the neighbourhood of Bray and Grovetown, and eventually to Bécordel-Fricourt at the beginning of October. No. 25 was also moved to the neighbourhood of Fricourt in November.

In the northern area No. 26 M.A.C., which had been stationed at St. Omer, was transferred to Beauval after the first week of July as the reserve convoy under the D.M.S. of the Reserve Army. It was moved towards the end of August to the neighbourhood of Contay, when Contay became a casualty clearing station centre.

Towards the end of September No. 6 M.A.C. was becoming unfit for work, and was consequently moved from its front area to Beauval, and replaced by a new convoy, No. 30 M.A.C., which had been brought from the L. of C.

When the preparations were being made for the attack on the Beaumont Hamel position by the Fifth Army, in November, No. 31 M.A.C. was transferred from the Fourth Army to Couin in the northern sector of the Fifth Army and attached to the XIIIth Corps, which was to take chief part in the attack.

When the operations on the Ancre ceased No. 30 M.A.C. was moved back to Doullens. The final distribution of motor ambulance convoys to Corps was then adjusted as follows :—

With the Fourth Army—

No. 25 M.A.C. attached to the XIVth Corps at Fricourt.
No. 27 M.A.C. attached to the 1st Anzac Corps at Heilly.
No 21 M.A.C. attached to the IIIrd Corps at Laviéville.
No. 20 M.A.C. attached to the XVth Corps at Les Alençons.
No. 10 M.A.C., which had been withdrawn from Fricourt on the 19th November, was at Corbie.

With the Fifth Army—

No. 26 M.A.C. with the IVth Corps at Bouzencourt.
No. 30 M.A.C. with the Vth Corps at Doullens.
No. 31 M.A.C. with the XIIIth Corps at Authie.
No. 6 M.A.C. at Beauval as Army Reserve convoy.

Use of Lorries, Buses and Light Railways.

For the conveyance of the lightly wounded from the lightly wounded collecting stations, the lorries of casualty clearing stations and such other lorries as could be made available were fitted with seats and used for this purpose ; also a number of charabancs or buses was placed at the disposal of the D.M.S. But the chief method of conveyance of the lightly wounded to casualty clearing stations from all except the XIIIth and XVth Corps in the earlier phases of the operations was,

as already noted, by empty supply wagons on the broad-gauge railway from Contay to Vecquemont, and by the narrow-gauge railway from Acheux to Gézaincourt. On the former the empty supply wagons were used, and special arrangements were made by the casualty clearing stations at Vecquemont for their reception on arrival there, previous to their being loaded on to the ambulance trains for conveyance to the base. In no case were the empty supply trains used for bringing back wounded to the base, and strict orders were issued to prevent their being so used without direct instructions from the D.M.S. of the Army concerned.

Wooden trolly line for bringing wounded from the casualty clearing stations at Puchevillers to ambulance train siding. Battle of the Somme 1916.

On the narrow-gauge railway between Acheux and Gézaincourt four trains had been organized, each consisting of eight covered trucks and three passenger coaches, or nine covered trucks and two passenger coaches. Each of these trains was organized to carry on an average 60 lying and 20 sitting cases, and it was estimated that each train would probably be able to make four journeys every twenty-four hours. The running of these trains was to be arranged by the railway transport officer at Gézaincourt in conjunction with the O.C., No. 29 C.C.S. The entraining arrangements at Acheux were under the control of the D.D.M.S., VIIIth Corps, who appointed an entraining medical officer. These trains were to be used by both the VIIIth and Xth Corps, but the whole of the lying down

accommodation was reserved for the VIIIth Corps wounded. The lightly wounded at the collecting stations at Clairfaye and at Acheux were brought back on this line to the casualty clearing stations at Gézaincourt, but the trains were also available for use at any time to evacuate cases from No. 4 C.C.S. at Beauval to the ambulance trains at Gézaincourt. Acheux was frequently shelled by long-range guns, and arrangements were made to load the trains at a point west of Acheux instead of at the railway station there.

When the broad-gauge railway had been constructed from Dernancourt to Maricourt, it was used for bringing back the lightly wounded from the walking wounded collecting station near Carnoy to the casualty clearing stations at Grovetown and Edgehill.

Classification of Casualties for Transport.

A record of the number of stretcher cases, walking cases, and shell shock cases was kept by the field ambulances of the 2nd and 8th Division. The record of the former division from 26th July to 11th August is as follows :—

Table showing the proportion of Lying Cases to Walking Wounded Cases in the 2nd Division from 26th July to 11th August 1916.

	Lying cases.	Walking wounded.	Shell shock (wounded).	
26th July	47	33	6 Lying	5 Walking
27th ,, ...	289	349	18 ,,	65 ,,
28th ,, ...	329	110	44 ,,	51 ,,
29th ,, ...	150	94	28 ,,	54 ,,
30th ,, ...	107	141	8 ,,	67 ,,
31st ,, ...	77	54	11 ,,	28 ,,
1st August ..	84	50	10 ,,	16 ,,
2nd ,, ..	54	37	6 ,,	19 ,,
3rd ,, ..	25	22	6 ,,	8 ,,
4th ,, ..	48	21	6 ,,	3 ,,
5th ,, ..	22	12	— ,,	6 ,,
6th ,, ..	10	18	— ,,	11 ,,
7th ,, ..	25	23	1 ,,	6 ,,
8th ,, ..	45	95	— ,,	5 ,,
9th ,, ..	17	36	1 ,,	5 ,,
10th ,, ..	10	3	— ,,	6 ,,
11th ,, ..	5	2	1 ,,	— ,,
Totals ..	1,344	1,100	146 ,,	355 ,,

Proportion of lying to walking = 1·22 : 1·00, or 54·9 per cent. of the total cases admitted = lying cases. Shell shock cases had 29·12 per cent. of the total as lying cases.

The record of the 8th Division is from two field ambulances only, No. 24 and No. 25, and for the first three days of the battle. The results were as follows :—

Casualties in the 8th Division—Comparison of Lying and Walking Cases.

1st to 3rd July 1916.

No. 24 Field Ambulance.			
Total admissions = 1,811	: Total evacuations =	1,757	
	Walking cases .. =	285 = 16·2	per cent.
	Stretcher and sitting cases .. =	1,472 = 83·8	,,
No. 25 Field Ambulance.			
Total admissions = 1,245	: Total evacuations =	1,245	
	Walking cases .. =	551 = 44·2	per cent.
	Sitting cases .. =	423 = 33·97	,,
	Lying cases .. =	271 = 21·7	,,
Total admissions to the two field ambulances .. =		3,056	
Total evacuations : walking cases .. .. =		836 = 27·9	per cent. of total evacuated.
,, ,, lying and sitting .. .. =		2,166 = 72·1	per cent. of total evacuated.

Depôts of Medical Stores.

The medical and surgical supplies of the field units and casualty clearing stations of the Fourth Army were replenished from No. 14 Advanced Depôt of Medical Stores at Corbie, No. 18 at Puchevillers, and No. 16 at Beauval ; and in the Third Army from No. 13 at Doullens, and No. 15 at Frévent at the beginning of the battle. When the Reserve Army took over the northern area of the Fourth Army, No. 18 Advanced Depôt of Medical Stores at Puchevillers had to supply the units in the northern sector of the latter army, but subsequently No. 19 Advanced Depôt of Medical Stores was brought up from the L. of C. to the Fourth Army area on the 7th August, and was opened in Albert. At no time did these advanced depôts of medical stores fail to meet the requirements of the medical units.

Evacuation from the Casualty Clearing Stations to the Base.

The success of the arrangements described above depended upon the adequacy of the means available for evacuating the casualty clearing stations and avoiding congestion of the army areas with large numbers of wounded.

The wounded were evacuated from the casualty clearing stations to the base hospitals by ambulance trains, temporary ambulance trains, barges on the canal, and by motor ambulance convoys on the roads.

The general co-ordination of the work of evacuation was directed by the D.D.G.M.S., who was in close touch with advanced G.H.Q. at Beauquesne, with the Ds.M.S. of the armies engaged, and through the D.G.M.S. office at Hesdin with the D.M.S., L. of C.

Before the battles commenced, the D.M.S. of the Fourth Army had estimated the number of wounded that could be dealt with in the army area on any one day as 24,000. His estimate was based on 9,500 being in the casualty clearing stations, 10,000 in the various field ambulances, and 4,900 on ambulance trains at one time In order to maintain an evacuation capacity of 4,900 by railway, he required seven ambulance trains carrying 400 each and three temporary ambulance trains carrying 700 each. This he regarded as the minimum number of ambulance trains and temporary ambulance trains which should come up to the casualty clearing stations daily. The total number of ambulance trains in France at the time was 29, of which six were required on the L. of C. for moving sick and wounded from hospital centres, such as Etaples, Abbeville and Treport, to the ports of embarkation for the United Kingdom, so that there were available for army areas 23 ambulance trains. An additional train arrived from England and was placed on the line on the 10th July.

Temporary ambulance trains were organized on a new principle. They were designated " T.A.T." and numbered consecutively from number 100 upwards. They were made up of passenger coaches, and were put in commission and given a staff of medical officers and orderlies from the time they were required until such time as it became no longer necessary to use them. Their movements were regulated in the same manner as the permanent ambulance trains. Each was calculated to carry 1,000 slight cases sitting up. The number in commission during the battles was eleven.

In order to provide seven ambulance trains daily for the Fourth Army area, practically the whole of the 23 available ambulance trains would have had to run to the Fourth Army area. To meet this requirement, therefore, the Ds.M.S. of the First and Second Armies were instructed to evacuate their sick and the small number of wounded which they were likely to have, as far as possible, to the hospitals at St. Omer by road. Arrangements were also made for clearing as many as possible of the Third Army wounded by road through Hesdin to Etaples, and also for retaining sick and wounded in the stationary hospitals at Frévent and St. Pol. It was thought that in this

way a sufficient number of trains would be available for the Fourth Army area, but the number of temporary ambulance trains could be increased to any extent required.

The D.D.G.M.S., however, had grave misgivings with regard to the clearing of casualty clearing stations, especially in the event of anything occurring to interfere with the running of the ambulance trains, and consequently prepared a scheme for evacuation by canal and road. In addition to No. 4 Ambulance Flotilla, which had been organized on the Somme when the Fourth Army took over the area from the Third Army, he had No. 3 Ambulance Flotilla transferred from the Aire–La Bassée Canal to the Somme Canal. As each of these flotillas consisted of six barges capable of conveying 30 or 32 lying down cases each, there was accommodation for 360 serious cases in the two flotillas, and arrangements were made to use them in clearing the casualty clearing stations at Corbie, Vecquemont and Amiens, to Abbeville.

The arrangements for evacuation by road were controlled by the D.D.G.M.S. from advanced G.H.Q. Arrangements had been made in case of necessity for the casualty clearing stations in the vicinity of Doullens and in the northern sector of the battle area to be evacuated by road to Etaples, through No. 47 Casualty Clearing Station at Hesdin. Further arrangements were made with the D.M.S., L. of C., for 500 sitting up cases, capable of enduring a three hours' journey by road, being cleared daily to Abbeville from Gézaincourt, Doullens, Beauval and Vecquemont on charabancs in case of necessity. Charabancs or the motor ambulance convoy at Beauval were also to take casualties to Hesdin, where they would be first received by No. 47 Casualty Clearing Station or No. 20 Field Ambulance, and then transferred, if capable of continuing the journey, to Etaples by No. 1 M.A.C., then stationed at Hesdin under G.H.Q. control. No. 20 Field Ambulance, which was permanently stationed as a G.H.Q. unit in a château near Hesdin, had its accommodation expanded in tents for the reception of 500 patients. With this and the accommodation in No. 47 C.C.S., 1,000 wounded could be accommodated at Hesdin. It was estimated that No. 1 M.A.C. could make three return journeys between Hesdin and Etaples in the twenty-four hours, the time taken between Hesdin and Etaples being two hours. The journey from Hesdin to Doullens took over one hour, and the convoy could thus make at least two return journeys between Doullens and Hesdin, or one return journey between Doullens and Etaples

daily, should it be necessary to send it up to the casualty clearing stations in the neighbourhood of Doullens. The convoy could also make two return journeys between St. Pol, Frévent and Etaples in the twenty-four hours. It was thus estimated that No. 1 M.A.C. could clear approximately 1,000 wounded every twenty-four hours. But in the event of No. 1 M.A.C. being unable to meet the demand made upon it in relieving congestion of casualty clearing stations in the Fourth Army No. 26 M.A.C. at St. Omer was held in readiness to be diverted to the battle area to assist No. 1 M.A.C., and an improvised convoy was prepared at Abbeville for use in case of need. Preparations were also made to relieve congestion in casualty clearing stations of the armies, which were not engaged in the battle of the Somme, by sending up convoys from the base in the event of a large number of casualties unexpectedly occurring.

It was fortunate that these arrangements for relieving casualty clearing stations by evacuation by road, in anticipation of a possible breakdown in the arrangements for evacuation by railway, had been made, as a breakdown actually occurred during the first twenty-four hours of the battle.

The Assistant Director of Railway Transport was at Amiens, and the D.M.S. of the Fourth Army was in direct communication with him with regard to the number of ambulance trains or temporary ambulance trains which he required, and the place to which they should be sent. The number garaged in the army area before the battle commenced was only three, and although others could have been brought up rapidly into the area on the 1st July had sufficient notice been given, the D.M.S. did not inform the A.D.R.T. until the afternoon of the 1st July of the additional trains he required, so that the full number of trains did not reach the army area until several hours later.

Consequently, by the evening of the 1st July and during the night of the 1st/2nd July the congestion in the casualty clearing stations was acute, not only because of the failure of a sufficient number of ambulance trains to come up into the area, but also because the arrangements for clearing wounded from the field ambulances to the casualty clearing stations acted so well that the wounded came in much more rapidly than was anticipated. Further, the favourable weather conditions and, to a great extent, the increased capacity of the narrow-gauge railway trains between Acheux

and Gézaincourt,* added to the rapidity with which the casualty clearing stations became filled during the first rush of wounded. Unexpectedly large numbers of lightly wounded came to Vecquemont, Heilly and Gézaincourt within a very short time of the first attack. Thus, during the first twenty-four hours of the battle 863 officers and 22,826 other ranks were admitted to field ambulances of the Fourth Army alone, and of these, 797 officers and 13,603 other ranks had been brought to the casualty clearing stations. In addition, there were 304 wounded prisoners of war in the field ambulances, of whom 16 had reached the casualty clearing stations, so that, out of the total of 23,993 wounded who had been collected to the field ambulances during the first twenty-four hours, 14,416 had been brought to the casualty clearing stations, a number greatly in excess of the accommodation available in the latter. Five ambulance trains were waiting to be loaded, one each at Vecquemont, Puchevillers, and Gézaincourt, and two at Heilly. They left during the day with 2,317 wounded, so that on the night of the 1st/2nd July the number in the casualty clearing stations was 12,099, or some 2,500 in excess of the accommodation in them. It was then that road and barge evacuation became imperative; 2,222 were cleared by road within the next twenty-four hours, and 120 by barges.

Fourteen ambulance trains and four temporary ambulance trains were then brought up, and left the Fourth Army area during the 2nd July, clearing a total of 11,299. The temporary congestion was thus relieved, and at no subsequent period of the operations did a similar occurrence take place, although at one time the running of ambulance trains on the Amiens–Albert line was interrupted by damage to the lines.

On the 2nd July, of the 14 ambulance trains, 4 ran to Vecquemont, 6 to Gézaincourt, 2 to Heilly, and 2 to Puchevillers. In addition 2 temporary ambulance trains cleared from Heilly and 2 from Vecquemont. Two barges cleared from Corbie, and 2 from Amiens; and, by road, No. 1 M.A.C. made one journey from Beauval and Gézaincourt to Hesdin, and charabancs and motor-bus convoys cleared from Corbie, Amiens and Vecquemont to Abbeville, and from Gézaincourt to Frévent.

On the 3rd July, 17 ambulance trains and 6 temporary ambulance trains cleared the casualty clearing stations,

* Instead of the 60 lying and 20 sitting cases for which they were originally equipped, they carried 300 sitting cases and a few lying cases each; and four trains ran daily.

3 ambulance trains and 1 temporary ambulance train from Heilly, 5 ambulance trains and 1 temporary ambulance train from Gézaincourt, 5 ambulance trains and 2 temporary ambulance trains from Vecquemont, 3 ambulance trains and 2 temporary ambulance trains from Puchevillers, and 1 ambulance train from Doullens. This was the day of maximum evacuation from casualty clearing stations during the battle, and, in fact, during the whole period of the war. The number evacuated from the Fourth Army area by rail on this day was 13,556. In addition 1,074 were also evacuated by road from Corbie, Vecquemont, Puchevillers, Doullens and Beauval, and 300 by barges from Amiens, making a total of 14,930.

The following memorandum was issued by the D.G.M.S. on the 10th July with a view to preventing any hitch in the running of ambulance trains in preparing for future battles :—

" During the operations of last week the congestion that was felt in casualty clearing stations on the evening of the 1st July and night of 1st/2nd July was due mainly to the unanticipated rapidity with which wounded were collected from the field ambulances to the casualty clearing stations and to the fact that the number of ambulance and temporary ambulance trains required for clearing the latter did not reach the Fourth Army area as early as they were expected.

" The favourable weather, and to a great extent the increased and under-estimated capacity of the light railway trains from Acheux to Gézaincourt, added to the rapidity with which casualty clearing stations became filled during the first rush of wounded, while the non-arrival of ambulance and other trains by the evening of 1st July was due to the fact that the A.D.R.T. had not been informed until the afternoon of 1st July of the actual number of trains required, so that it was impossible for the trains to reach the army area until several hours later.

" To avoid similar congestion of casualty clearing stations in the event of operations of equal magnitude taking place, the D.M.S. will invariably form an estimate of the number of ambulance trains and temporary ambulance trains he is likely to require at a given time and place at least twenty-four hours beforehand, and inform A.D.R.T. accordingly. This estimate of the number of trains should be based on information received from the General Staff and on experience of past operations. With these as a guide there should be no great difficulty in calculating the approximate number of lightly and severely wounded who are likely to arrive at the different casualty clearing stations on any given day, and of the number and class of ambulance trains required to meet the congestion of wounded, which, with the present means of rapid collection of wounded from field ambulances, invariably occurs in casualty clearing stations on the evening and night following a big battle.

" Similarly the D.M.S. should inform the A.D.R.T. whenever he anticipates that the rush of wounded and the numbers coming into casualty clearing stations are diminishing and capable of being dealt with by the normal running of ambulance trains, in order that the railway authorities may be in a position to release the temporary ambulance trains.

" It is essential that the temporary ambulance trains should not be kept in commission longer than is necessary, and the D.M.S. should not as a rule ask for them in order to meet a rush of wounded in connexion with minor operations or operations in which the number of troops

engaged is comparatively small. In such operations evacuation by the ordinary ambulance trains, assisted by road evacuation, is generally sufficient to meet requirements, and, in any case, Ds.M.S. should realize the fact that temporary ambulance trains can always be formed and brought up within twenty-four hours, notice being given by them to the A.D.R.T. that they are required in a particular area."

On subsequent days during the whole period of the Battle of the Somme the numbers requiring evacuation did not approach these figures, and, as already stated, there was never any difficulty in dealing with the situation.

The refusal to permit ambulance trains to run on the newly constructed broad-gauge railway from Vecquemont to Contay in the earlier phases of the battle was justified by the fact that two of the ambulance trains sent up to Contay on this line, after it was opened for ambulance trains, went off the rails about one mile from Contay, when fully loaded, and it was necessary afterwards to run on this line only the earlier and lighter ambulance trains, which had been organized from rolling stock in France in 1914.

The running of ambulance trains to the Reserve Army was directed by the A.D.R.T. of the Third Army at Doullens, and worked smoothly and efficiently.

Arrangements at the Base.

The accommodation in the hospitals on the L. of C. and in convalescent and stationary hospitals in the front area was, on the 1st July, approximately 61,000, including 1,300 for Indians, and the number of beds vacant at the time in the base hospitals was 30,602, including 428 for Indians, in convalescent depôts, 5,252, including 465 for Indians ; in stationary hospitals in army areas, 383, making a total of 36,237, including 893 for Indians. Consequently, it became a matter of urgency to clear a large number of wounded to the United Kingdom, and in doing so a considerable number of slighter cases were evacuated from France. As a result of this experience, the convalescent depôts in France were not only increased in number, but were organized for as many as 5,000 convalescents at a time, and a large convalescent depôt to accommodate that number was opened at Cayeux near the mouth of the Somme on the 24th July.

The greatest number embarked on any one day during the battle was 11,946, on the 6th July, a figure which also represents the maximum number on any one day placed on board ships during the war. On the three previous days in July the numbers cleared from the base hospitals were 5,609, 8,350

and 7,011. After that date evacuation overseas was carried on at the rate of between 4,000 and 5,000 daily until the 9th July, and between 2,000 and 3,000 daily from then to the 15th July. The numbers evacuated from the Fourth Army area alone during the Battle of the Somme are shown in Appendix B, pp. 522–6.

The ambulance trains from the northern area of the battle ran, as a rule, to Boulogne and Etaples, and from the southern area to Rouen and Havre, Abbeville and Treport.

Arrangements for "Shell-shock" Casualties.

The question of the disposal of shell-shock cases arose during the battles. All shell-shock cases were transferred to No. 3 Canadian Stationary Hospital at the Citadel, Doullens; and from the 12th November, onwards, the diagnosis of shell-shock was not permitted to be made in any of the units further forward; cases of that nature were sent back under the designation "not yet diagnosed." By the end of the year arrangements had also been made for the reception and treatment of these cases from the First and Second Armies at No. 4 Stationary Hospital, St. Omer; from the Third Army area at No. 6 Stationary Hospital at Frévent, and from the Fourth Army at No. 21 C.C.S. at La Neuville, near Corbie. A specialist in nervous disorders was appointed to each of the centres. Consulting neurologists were also appointed, Lieut.-Colonel Gordon Holmes for the Boulogne, Calais, Etaples bases, and the Second and Third Armies; and Lieut.-Colonel C. S. Myers for the Abbeville, Treport, Dieppe, Rouen and Havre bases, and for the Fourth and Fifth Armies.

Sickness during the Battles.

The health of the troops during the battles was good, but a considerable number of cases of diarrhœa and dysentery began to appear in August, and went on increasing during September and October. The West India Regiment had arrived from Egypt, and came into the Reserve Army area in September with a considerable number of cases of dysentery amongst the men. They appeared to have had an extensive outbreak of diarrhœa on the voyage to France, but dysentery had already appeared amongst the troops already there.

Owing to the constant movement of divisions from one area to another the divisional sanitary sections were never able to

maintain permanent sanitary arrangements in the area through which they passed. Consequently, the D.D.G.M.S., after the battle and in the absence of the D.G.M.S., brought the matter to the notice of the A.G. and suggested that the divisional sanitary sections should become extra-divisional troops and allotted definite areas of work, thus causing their movements with the divisions to cease. This method of enabling the divisional sanitary sections to maintain a high standard of sanitation in the billeting areas was carried out in the Fifth Army area in December, but did not become a generally authorized method of utilizing the divisional sanitary sections until the following year owing to objections raised by the Adjutant-General.*

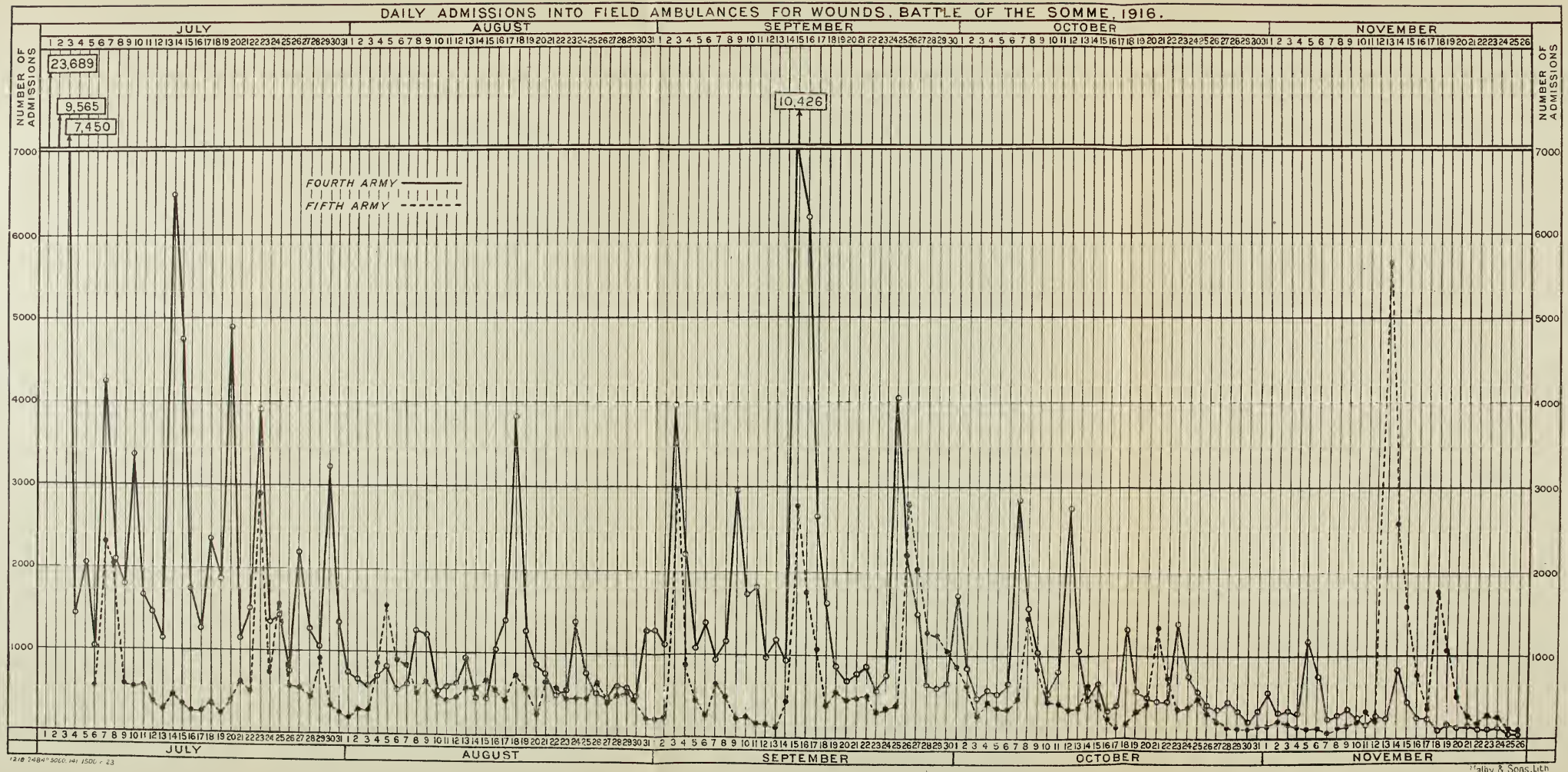
Another innovation in the work of the divisions was the establishment by a field ambulance of a scabies centre in divisional and corps areas for the treatment of men suffering from this complaint.

Casualties.

The medical services during the Battle of the Somme, consisting as it did of a continuous succession of major and minor operations alternatively during a period of five months, had a strain thrown on them which was without parallel. Between the 1st July and 30th November 1916, 316,073 wounded were admitted to the field ambulances of the Fourth, Fifth (Reserve) and Third Armies. In one month, July, the number in all of the armies was 145,421, of whom 123,908 were wounded on the Somme battlefields. In one period of twenty-four hours, from 6 a.m. 1st July to 6 a.m. 2nd July, 26,675 wounded were collected by the field ambulances. During July alone, 2,192 of the enemy wounded were also cared for by the British medical services. The strain on individual casualty clearing stations was probably even greater than that on the field medical units. No. 29 C.C.S. at Gézaincourt received as many as 5,346 in one day alone, during the twenty-four hours 6 a.m. 2nd July to 6 a.m. 3rd July, and 11,186 in the first three twenty-four hour periods of the battle.

In addition to 289,363 evacuated by ambulance trains between July and November 1916 from the Fourth, Fifth and Third Armies, 8,739 were evacuated from the Fourth Army by barges on the Somme, and 6,183 by road, of whom 4,198 were carried by motor ambulance convoy and 1,985

* See General History of the Medical Services, Vol. II, p. 62.


DAILY ADMISSIONS INTO FIELD AMBULANCES FOR WOUNDS. BATTLE OF THE SOMME, 1916.
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
NUMBER OF ADMISSIONS
23,689
9,565
7,450
10,426
FOURTH ARMY
FIFTH ARMY
7000
6000
5000
4000
3000
2000
1000
Malby & Sons, Lith

by charabancs or buses. For evacuating these numbers ambulance trains made, from the Fourth Army area alone, 491 journeys, temporary ambulance trains 31 journeys, barges 290 journeys, motor ambulance convoys 11 journeys, and convoys of charabancs or buses 3 journeys.*

In addition to the wounded, provision had to be made for the sick, of whom the average constantly in the care of the medical units in the field armies numbered 13,766.

Casualties were also occurring in armies not actively engaged, and the statistics for the whole year 1916 illustrate the extent of the work thrown on the medical services in bringing wounded and sick back from the army areas to the hospitals on the lines of communication. The total number so carried by permanent ambulance trains amounted to 713,957, and by temporary ambulance trains 23,820, in 1,772 and 29 journeys respectively. The numbers carried lying down were 306,690, all by permanent ambulance trains, and the numbers carried sitting up 431,087, of whom 23,820 were in temporary ambulance trains. The average number carried on each journey of a permanent ambulance train was 330, and of a temporary ambulance train 821. The ambulance flotillas brought back 16,918 during the year, in 565 barge journeys, 7,916 were evacuated by the flotillas Nos. 2 and 5 on the St. Omer–Aire–La Bassée and Aire–Merville canal, and 9,002 by flotillas Nos. 3 and 4 on the Somme Canal.

Yet, notwithstanding these colossal figures, the medical services stood the strain with persistent cheerfulness and undiminished vigour. This happy result could only have been achieved by careful preparation of the medical services from the front line to the base, and by the loyal co-operation of all those over whom the Director-General had administrative control. The casualties amongst them were great, 52 officers and 406 other ranks were killed, or died of wounds, during the battles, and 188 officers and 2,107 other ranks were wounded; while 5 officers and 38 other ranks were reported missing. The number of casualties in the R.A.M.C., Canadian, Australian, New Zealand and South African Medical Corps, all of which at one time or another were engaged in the front area, is shown in the following table.

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* The medical services of the French Sixth Army, which fought on the Somme on the right of the British Fourth Army, were reported to have evacuated 105,672 wounded and 13,453 sick from their field medical units during July to November. They employed six barges on the Somme Canal and evacuated by them during July as many as 13,265 patients.

Corps.	Killed.		Wounded.		Missing.	
	Officers.	O.R.	Officers.	O.R.	Officers.	O.R.
July.						
R.A.M.C. ..	15	129	58	744	2	13
A.A.M.C. ..	—	4	2	39	—	—
N.Z.M.C. ..	—	—	—	—	—	—
C.A.M.C. ..	—	—	—	—	—	—
S.A.M.C. ..	—	1	—	35	—	—
Totals ..	15	134	60	818	2	13
August.						
R.A.M.C. ..	7	46	29	183	—	4
A.A.M.C. ..	1	10	2	43	—	2
N.Z.M.C. ..	—	—	—	—	—	—
C.A.M.C. ..	—	—	—	—	—	—
S.A.M.C. ..	—	—	—	—	—	—
Totals ..	8	56	31	226	—	6
September.						
R.A.M.C. ..	12	102	55	488	2	4
A.A.M.C. ..	—	3	—	9	—	15
N.Z.M.C. ..	1	12	1	77	—	—
C.A.M.C. ..	1	22	5	100	—	—
S.A.M.C. ..	—	—	—	—	—	—
Totals ..	14	139	61	674	2	19
October.						
R.A.M.C. ..	6	32	20	164	1	—
A.A.M.C. ..	—	—	—	—	—	—
N.Z.M.C. ..	—	—	—	—	—	—
C.A.M.C. ..	—	6	7	38	—	—
S.A.M.C. ..	—	—	—	—	—	—
Totals ..	6	38	27	202	1	—
November.						
R.A.M.C. ..	8	31	7	143	—	—
A.A.M.C. ..	—	6	1	33	—	—
N.Z.M.C. ..	—	—	—	—	—	—
C.A.M.C. ..	1	2	1	11	—	—
S.A.M.C. ..	—	—	—	—	—	—
Totals ..	9	39	9	187	—	—
Grand Totals ..	52	406	188	2,107	5	38

For all armies the casualties amongst medical officers between the 25th June 1916 and the 14th November 1916 were considerably greater, as shown in the following table :—

	Killed or Died of Wounds.	Wounded.	Missing.	Totals.
Field Ambulance M.Os.	20	65	—	85
Infantry Battalion M.Os. ..	43	149	4	196
Artillery M.Os.	9	18	—	27
Administrative Staff	1	2	—	3
Casualty Clearing Station M.Os.	—	6	—	6
Sanitary Officers	1	1	—	2
Totals	74	241	4	319

CHAPTER III.

THE ADVANCE TO THE HINDENBURG LINE IN 1917.

THE winter of 1916–17, following the battles of the Somme and Ancre, was one of great severity, with continuous frost and much snow. When the thaw came many of the roads were badly damaged, and this interfered considerably with the smooth running of motor ambulance transport, especially along collateral routes of evacuation. Repairs were, however, actively undertaken, and by the time the spring offensive of 1917 commenced roads were in fair condition along the main lines of evacuation, although the collateral routes were still in a very bad state.

The British line had been extended south of the Somme during February as far as the Amiens–Roye road to a point about four miles north-west of Roye ; the whole British front was then 110 miles in length, occupied by the Fourth Army on the right from the Roye road to opposite Le Transloy, by the Fifth Army to opposite Serre, by the Third Army to Arras, by the First Army to Armentières, and by the Second Army on the extreme left to Ypres. At that time preparations were being made for a general offensive with a view to cutting off the enemy salient between Arras and Le Transloy ; but, before the winter had set in and during January, February and March 1917, the Fifth Army continued its pressure in the Ancre region and advanced its line to Grandcourt, Miraumont, Serre, Gommecourt and Irles, so that the salient in this area had been reduced to a continuous front facing Bapaume. The enemy then withdrew to his new defensive system, the Hindenburg line, which ran roughly from Tilloy-les-Mafflaines, immediately south-east of Arras, through Neuville Vitasse, Bullecourt, Quéant and Havrincourt to St. Quentin. His retreat was closely followed up by Fourth and Fifth Army troops and the right sector of the Third Army from the 17th March onwards, so that by the beginning of April these armies were established on a line facing the enemy's defences from Arras in the north to St. Quentin in the south. Both during and after the battles, which commenced on the 9th April on the Arras and Vimy Ridge front, continuous pressure was maintained against this line, occasionally with fiercely fought

local attacks, especially at Bullecourt, until the more extensive operations of the summer and autumn of 1917 led to a complete readjustment of the British front and a rearrangement of the army areas.

Medical Preparations for the Advance.

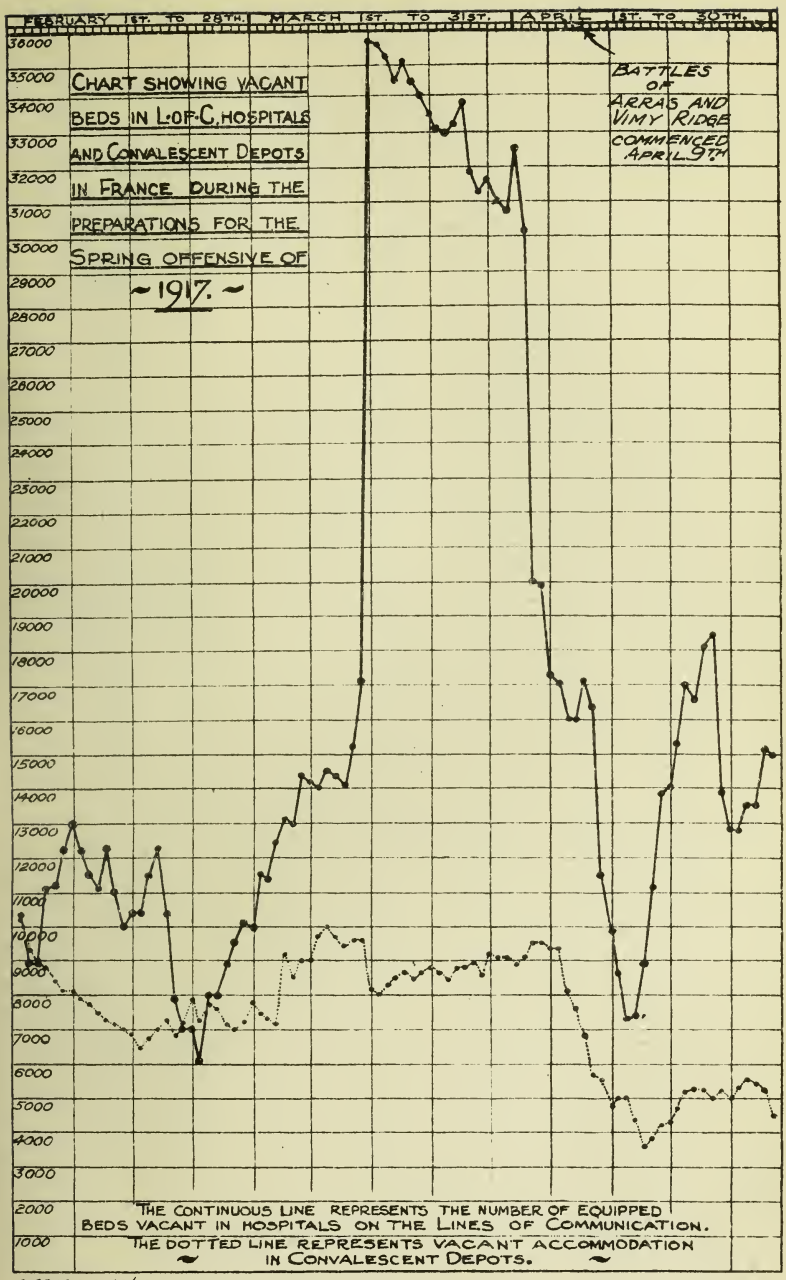
The medical arrangements for the advance to the Hindenburg line and for the subsequent battles of Arras and Vimy Ridge were made by the Ds.M.S. of the armies engaged, and the D.G.M.S. at G.H.Q. was scarcely called upon to make any special preparations for them beyond co-ordinating the work and building up a strategical situation adapted for the proposed spring offensive. The chief anxiety felt by the D.G.M.S. was with regard to the number of hospital beds vacant on the lines of communication.

On his behalf the D.D.G.M.S. held a conference at Hesdin of Ds.M.S. of Armies and of the L. of C. on the 2nd April, when the general strategical position of the medical services with regard to the coming offensive, and the policy which it was desirable that the Ds.M.S. should follow, were explained. Broadly, the policy was for the Second and Fourth Armies, which would not be actively engaged, either to retain as many of their sick and wounded as possible in the army area, in order to avoid the necessity of sending ambulance trains to them until the pressure had decreased, or to relieve congestion in their units by road evacuation to hospitals in St. Omer and Abbeville. The Fifth and Second Armies were also to be prepared, if necessary, to receive wounded by lateral routes of evacuation from the Third Army and the First Army respectively. The Directorate of Transportation had arranged to repair certain roads for these lateral means of evacuation.

Anxiety regarding Hospital Accommodation.—During the five months of the Somme battles the number of sick and wounded that were evacuated from France averaged over 70,000 monthly, but after that period there was a tendency to retain sick and wounded in France instead of evacuating them to England. Thus, during December 1916 and January and February 1917 the numbers sent out of France were less than 40,000 in each of these months. Consequently the number of permanently equipped beds which remained vacant gradually became less and less until, on the eve of the offensive against the Arras–Le Transloy salient, with an anticipated casualty list of some 30,000 during the first twenty-four hours, the number of these vacant beds in hospitals on the L. of C. was little more than

7,000 on the 22nd February 1917, with about the same number in convalescent depôts, and some 2,000 in stationary hospitals in army areas. The situation was so critical that the D.D.G.M.S. was sent to the War Office, where he had a conference on the subject with the A.G., the D.G.A.M.S., and others on the 24th February. Two alternatives were then suggested, one was to increase the evacuation from France to 4,000 daily for a week or ten days in order to have a margin of 30,000 to 40,000 vacant beds, or to add 20,000 beds to the hospital accommodation in France by expansion and mobilize more general and stationary hospitals. For this purpose it was suggested that five general and nine stationary hospitals should be sent to France. Ordnance equipment for this expansion of beds was available, but the chief difficulty was lack of medical personnel. The D.G.M.S. in France was prepared, however, to accept for general and other hospitals a reduced establishment of one medical officer for every 100 beds. But the only immediate measure possible for relieving the congestion of the base hospitals in France was increased evacuation to England, and the A.G. agreed to the numbers evacuated daily being doubled until a sufficient number of vacant beds was obtained. This was carried out immediately after the D.D.G.'s visit, and the vacant beds gradually increased until, on the 13th March, the number exceeded 30,000, and remained above that figure until the beginning of April, when the vacant beds were again rapidly filled by the unloading of sick who had been retained in army areas in anticipation of the approaching battles.

Reconnaissance for New Hospital Centres.—In order to avoid similar conditions in future, the A.G. at the War Office asked that a reconnaissance should be made of the areas south of the Seine with a view to the selection of additional sites for hospital centres and convalescent depôts. Sites in Brittany had been suggested, but hospital centres far from the front line had many disadvantages, and, although reconnaissances were made in the vicinity of Brest, Cherbourg and elsewhere, the proposal to send the sick and wounded to Brittany was abandoned. Subsequently a site near Deauville–Trouville was selected. It was not ready, however, to receive convalescents or others until the following August. The proposal to send over five general and nine stationary hospitals resolved itself into seven new general hospitals of 1,040 beds each being organized from existing Territorial Force general hospitals. They arrived in France in April 1917.



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Estimate of Ambulance Train Requirements.—The number of ambulance trains which were likely to be required for the offensive had been considered by the D.D.G.M.S. in consultation with the Directorate of Transportation. At the beginning of 1917 the following daily journeys of permanent ambulance trains were estimated as likely to be necessary in preparing for the offensive :—

First	24 hours :	18	ambulance trains for		8,000.
Second	,,	,,	,,	,,	,,
Third	,,	,,	,,	,,	,,
Fourth	,,	,,	,,	,,	,,
Fifth	,,	11	,,	,,	5,000.
Sixth	,,	9	,,	,,	4,000.
Seventh	,,	7	,,	,,	3,000.

These were calculated on the assumption that during the first three periods of twenty-four hours between 40 and 50 per cent. of the wounded could be dealt with by temporary ambulance trains supplemented by road evacuation to the base, or by road evacuation to casualty clearing stations of armies not actively engaged. But after the first three days it was calculated that the wounded left in the casualty clearing stations would be of a more severe type, and that, therefore, a larger proportion would require evacuation by permanent ambulance trains than by temporary trains. The number of temporary ambulance trains, therefore, required during the first three periods of twenty-four hours was estimated at nine daily, for the fourth period four, and for the fifth and sixth periods one each.

The requirements as estimated by the D.D.G.M.S. were, consequently, for 54 journeys by permanent ambulance trains and 27 journeys by temporary ambulance trains during the first three days for the purpose of evacuating 48,924 wounded. This was the estimate of probable requirements before the Germans had withdrawn from the Arras–Le Transloy salient, and was therefore considerably in excess of what was eventually necessary. It was, however, believed at the time that the casualties requiring evacuation from casualty clearing stations would be considerably greater than during the earlier days of the Somme battle, during the first three days of which 35,814 were evacuated from the Third and Fourth Armies.

Arrangements for Lightly Wounded and Sick.—Some anxiety was felt with regard to the running of the ambulance trains. The main line railway ran south from Lapugnoy to St. Pol, Frévent, Doullens and Gézaincourt to Abbeville, and was joined by branch railway lines running from casualty clearing

station centres at Warlincourt, Agnez les Duisans, Aubigny, Bruay, Barlin, Coupigny, Bethune, and Noeux-les-Mines. In consequence of the military necessity of restricting the number of ambulance trains running on the branch lines to these casualty clearing station centres, it was essential that as many as possible of the sick and wounded should be brought by road to medical units on the main line. The medical units at St. Pol, Frévent, Doullens and Gézaincourt were consequently kept chiefly for the sick and wounded who could be transferred to them in lorries or buses. No. 29 C.C.S. at Gézaincourt was in the Fifth Army area, and although before the battles the D.M.S. of the Fifth Army wanted to close Gézaincourt

Regimental aid post in Hindenburg Trench.

and Varennes and transfer the casualty clearing stations there to a more forward area, the policy of G.H.Q. made it necessary to retain them, in case they might be required for the reception of sick and wounded brought to the main line of railway at Gézaincourt or from the Third Army by the lateral routes leading to Varennes and thence to Gézaincourt.

The Medical Services during the Advance.

During the advance to the Hindenburg line the work of the medical services presented few features that were new. Unlike the only previous operations with which they were comparable, namely, the advance to the Aisne in September 1914, the arrangements for the collection and evacuation of casualties followed a methodical and organized system, under army,

corps and divisional administrative medical control. Regimental aid posts, advanced and main dressing stations, and walking wounded collecting posts were established in echelons conforming with each forward movement. The work of the bearer divisions, however, was much hampered during these operations by the condition of the ground and roads over which the advance had been made. The roads were broken by shell-holes and mines, and the ground off the roads was deep in mud. The bearers worked from the regimental aid posts over this broken country by a system of relay posts.

The IInd Corps Medical Services.—The advance on both flanks of the Ancre Valley was made by divisions of the IInd Corps, and south of the Albert–Bapaume road by divisions of the Ist Anzac Corps. The IInd Corps divisions were the 2nd on the right, the 18th in the centre, and the 63rd (R.N.) on the left. The work of the front line medical services and the physical conditions with which they had to contend during the advance are well described in the following account by the A.D.M.S. of the 18th Division (Colonel J. Poe) and by the accompanying map.

"On 1st January 1917 the 18th Division were in rest with the IInd Corps near Abbeville.

On 11th January they marched forward, and on the 16th took over from the 61st Division the portion of the line south of the Ancre that they had previously held in December.

The division was warned that the IInd Corps (63rd, 18th and 2nd Divisions) were to attack in about a month's time.

The 63rd Division were astride the River Ancre, the 18th Division held the line from about 700 yards south of Grandcourt to some 1,000 yards south of Petit Miraumont, and the 2nd Division were to the east of the latter point.

The chief problem of all services was the extraordinary difficulty of transport.

East of the Ancre there were four possible lines of evacuation :—

1. The river road, Hamel–St. Pierre Divion.
2. Nab Valley road, running from Aveluy to near Moquet Farm.
3. Centre road running to Aveluy–Ovillers—R.33.d. Central.
4. The Albert–Bapaume road.

There was also a cross-road connecting Nab Valley road with Pozières, but in bad weather this was impassable for wheeled traffic at the head of Nab Valley, and was very bad but just passable near Pozières Cemetery.

The other roads were all in a very bad condition, but were passable for motor ambulances.

All the country in front of the line held on 1st July 1916 was impassable even for pack animals except on made roads, and the only way of conveying wounded north-east of the line St. Pierre Divion–Pozières was either by stretchers along duckboards, or by a single line of light railway track, along which trucks were pushed by hand.

The accommodation east of the Ancre consisted of an advanced dressing station at Aveluy Post, and, east of that, of two or three German dugouts.

The IInd Corps selected Aveluy Post as their main dressing station.

The 18th Division chose the Quarry crossing north-west of Pozières as the site for their advanced dressing station.

About 18th January, five weeks of hard frost commenced, and the whole of the wet mud froze to the hardness of a metalled road ; this made transport much easier, but made it excessively difficult to do any digging, and excavations for dugouts could only be made with the assistance of explosives.

The following accommodation was made :—

At the advanced dressing station, Quarry Crossing—four elephant hutches.

Rifle Dump between Pozières and Courcelette—two elephant hutches.

Hessian Trench, near tramhead, Valley of Death—one tunnelled dugout (bearer relay post).

Regina Trench, slightly north of Hessian Trench—one tunnelled dugout.

The site for the advanced dressing station was chosen because it was the point at which the tramway cut the furthest forward road. The site was shelled occasionally, and therefore dugouts were necessary. These were made with steel shelters (elephant hutches). Other similar shelters were installed in a small depression at the Rifle Dump.

In front of this the whole country was in full view of the enemy and only tunnelled dugouts were safe. It was, however, very difficult to treat stretcher cases in tunnelled dugouts, and, moreover, the surrounding sea of mud made any surgical treatment especially difficult.

The system adopted was to obtain tunnelled dugouts as shelter for bearers and instruct all ranks that the all-important point was to get all wounded back as rapidly as possible, the first place where full dressings could be done being at the advanced dressing station at Quarry Crossing.

The evacuation of wounded was entirely dependent upon the tramline, which the R.A.M.C. assisted to build ; this ran from Aveluy Post through Ovillers, Quarry Crossing, Rifle Dump to tramhead at Hessian Trench.

On 3rd February the 63rd Division advanced north of the Ancre and the enemy evacuated Grandcourt on 6th February.

On 7th February the 18th Division took Folly Trench, east of Grandcourt, with light casualties.

On 9th February the 18th Division took over the line up to the south bank of the Ancre.

On 15th February the thaw commenced and the whole country-side turned into a sea of mud ; motor ambulances could still proceed along the metalled roads shown in the map, but these became very difficult. The important lateral communication Thiepval–Pozières road became impassable for wheeled traffic near Moquet Farm and almost impassable for motor ambulances at Pozières. The Ovillers road remained passable, but only east-bound traffic was allowed along it ; the advanced dressing station was therefore in great danger of being cut off from all connexion with the rest of the world.

On 17th February the 18th Division took Boom Ravine ; about 500 walking wounded and 180 stretcher cases were evacuated between 8 a.m. and 8 p.m. The stretcher cases were carried to tramhead at Hessian Trench, a distance of 2,400 yards ; they were then pushed along the tramline for 2,300 yards to the advanced dressing station. Thence a number were conveyed by petrol trains direct to Aveluy Post ; others were carried 600 yards down the road to the head of Nab road and thence cleared by motor ambulances.

The regimental medical officers had aid posts in Boom Ravine, and the bearer officers did dressings in a German gun-pit a little to the south-east. Four relays of bearers were required to carry from Boom Ravine to the tramhead north of Rifle Dump. This carry was uphill all the way, over ground completely destroyed by shell-fire and knee deep in mud,

and the whole course was shelled heavily all day. It was the heaviest work our bearers ever had to perform ; all the bearers of the three field ambulances were employed. All the wounded were cleared by 6 p.m.

After this attack there was a lull for eight days, during which time efforts were made to repair the damage done by the thaw to the roads and tramlines.

On 25th February it was reported that the enemy had evacuated Miraumont, and on the 26th the 18th Division had occupied Miraumont and Pys and were holding the line in front of Irles.

Evacuation of wounded now became very difficult, as there was no road east of the line St. Pierre Divion–Pozières passable for wheeled traffic except the Albert–Bapaume road, which lay too far south to be of any use.

The following line of evacuation was formed :—

Regimental aid post and advanced bearer relay at Red Cross Gulley, 2,000 yards from front line.
2nd bearer relay south-east of Petit Miraumont.
3rd relay at head of Boom Ravine.
4th relay at Oxford Circus.
5th relay at Valley of Death.
6th relay at Tramhead.
7th relay at Rifle Dump.
8th relay at Quarry Crossing advanced dressing station.

This line involved a stretcher carry of 5,000 yards, followed by a tram journey of 2,400 yards.

The tramline could only be worked by pushing by hand. It effected a great saving of personnel, as four men could push four patients, nevertheless the work involved was as hard as carrying a stretcher.

As the advanced dressing station at Quarry Crossing was now safe from shell-fire, the accommodation there was increased by levelling the ground and erecting tents, sufficient to form a divisional main dressing station, but, unfortunately, the roads leading to it went steadily from bad to worse.

During the first week in March great efforts were made by the division to push the tramway forward and repair the river road through Grandcourt.

On the 10th March the division took Irles, and on 13th March the enemy retired to Achiet le Grand.

The roads through Miraumont and Irles were found to be practicable for wheeled stretchers, and cases were taken to Miraumont by wheeled stretchers and thence carried by hand to the new tramhead south of Petit Miraumont, and thence pushed by hand 5,500 yards to Quarry Crossing. Fortunately the casualties were very light.

On the 17th March the enemy evacuated the Achiet le Grand line and retired to Croisilles.

On the 18th the division occupied St. Leger. An advanced dressing station was formed at Bihucourt in a factory the enemy had not destroyed. Empty horse ambulances were got forward through Grandcourt and Miraumont and worked between St. Leger and Bihucourt ; another relay of horse ambulances worked from Bihucourt to Miraumont, thence cases were evacuated along the tramlines as the Grandcourt road was too bad to send loaded horse ambulances along.

On the 19th one Ford car was got forward through Bapaume to Bihucourt and worked between St. Leger and Bihucourt.

The work of evacuation was assisted by the light horse ambulances of a cavalry division which came forward with the 18th Division.

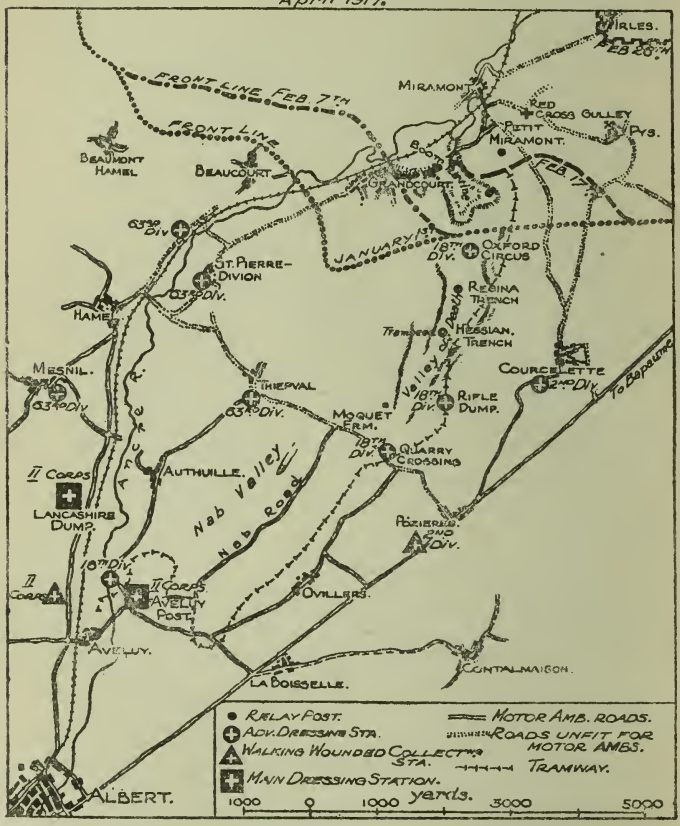
The line of evacuation was therefore as follows :—

St. Leger—Bihucourt—Petit Miraumont : 13 miles by horse ambulances.
Petit Miraumont—main dressing station at Quarry Crossing : three and a quarter miles by push tramline.

On the 20th the 18th Division attacked Croisilles, and had 50 casualties. On the night of the 20th the 18th Division were withdrawn to rest.

The history of the medical arrangements of the 18th Division during these three months is simply the story of a struggle against difficulties of transport. Evacuation of wounded would have been impossible without the use of tramways, unfortunately the petrol tractors were only of a limited use, as the forward lines had to be laid so hurriedly as to be unfit to carry the tractors.

THE ADVANCE TO THE HINDENBURG LINE.
II CORPS FRONT.
April 1917.



The line Aveluy Post–Quarry Crossing was used on 17th February with great success, but the same day its use was forbidden for wounded by the IInd Corps on the ground that this use delayed the bringing up of ammunition.

The evacuation of wounded was very seriously handicapped throughout the period under consideration by the appalling state of the few existing roads behind our lines, the roads between the River Ancre and the Thiepval–Pozières line often became impassable in places even for horse ambulances, and west of the River Ancre, between Aveluy and the casualty clearing stations at Varennes or Contay, the roads were also

in a very bad condition, and the journey of ten to twelve miles back to the casualty clearing stations was very bad for the seriously wounded. This journey was greatly shortened when casualty clearing stations at Edgehill came into the Fifth Army area about the 10th February.

During the advance from Miraumont–St. Leger the value of horse ambulances was brought out in a most striking manner. Without them it would have been impossible to have evacuated the wounded from St. Leger."

The Medical Services of the Ist Anzac Corps.—In the advance to Bapaume between the 14th March and 5th April the medical services of the Ist Anzac Corps were chiefly involved. The tramline ran to the advanced dressing stations at Le Sars, on the Albert–Bapaume road, and at Factory Corner between it and Guedecourt over an area pitted with shell-holes, and the work of carrying the casualties back to them was similar to that described above. The Factory Corner line was extended on the 18th March to Warlincourt, and casualties could then be brought back by it to the main dressing station at Bazentin-le-Petit. The petrol tractor trains were a great help, as casualties could be brought to the dressing station in half an hour instead of three and a quarter hours, which would have been the time required had the whole carrying to be done by hand.

Motor ambulance convoys were able, as a rule, to come up to the main dressing station positions, but the journey back to the casualty clearing stations was considerably longer than during the Somme operations. The chief difficulty was the broken state of the roads after the thaw.

The Casualty Clearing Stations.—The casualty clearing stations remained grouped in the positions to which they had been moved in the later phases of the Somme battles, while the main dressing stations advanced. Consequently when the advance to the Hindenburg line had been made, the chief work of the medical services in the armies concerned consisted in selecting new sites for groups of casualty clearing stations in more advanced positions in the area taken from the enemy, and establishing them there.

The Fourth Army, which had taken over the area north and south of the Somme from the French, took over the huts of several excellently organized French field ambulances and clearing hospitals, notably near Bray, Gailly and Cayeux, and also brought casualty clearing stations forward to Peronne-la-Chapelette, Nesle, Tincourt and Ytres, closing its former casualty clearing station centres at Allonville, Corbie, Heilly and Grovetown. Edgehill, its remaining centre, had come

into the Fifth Army area in February on the Fourth Army extending its front south of the Somme. Tincourt and Ytres then became the chief casualty clearing station centres of the Fourth Army, the former being close to the main Peronne–Cambrai railway line and the latter near a new broad-gauge railway. Ambulance train sidings were constructed at each of these centres. Two casualty clearing stations (Nos. 48 and 21) were established at Ytres, and four (Nos. 39, 36, 5 and 13) at Tincourt, No. 39 and No. 13 having been transferred from Gailly and replaced there by a stationary hospital (No. 41) from the lines of communication.

The new sites for groups of casualty clearing stations in the Fifth Army area were at Achiet-le-Grand and Grevillers. The sites at Puchevillers and Contay were then given up, as also Recmenil Farm and Gézaincourt, but the last of these sites, with No. 29 C.C.S., was retained, as already noted, by instructions from G.H.Q., until May, when the Arras battles were coming to an end. Two casualty clearing stations were established at Achiet-le-Grand, near the main line of railway from Albert to Arras, and three at Grevillers, in open fields on either side of a new broad-gauge railway. The group of casualty clearing stations at Varennes was retained, but with two in place of three, and a single casualty clearing station was kept at Edgehill. Single units were also placed at Aveluy and Colincamps.

The medical services of the Fourth and Fifth Armies during the ensuing battles of Arras were thus chiefly engaged in establishing these new posts and organizing advanced and main dressing stations, divisional and corps rest stations, and special centres for the treatment of scabies, nervous disorders, and dentistry in their new areas. The special preparations for the battles of Arras and Vimy Ridge were confined to the Third and First Armies.

CHAPTER IV.

THE BATTLE OF ARRAS, 1917.

AS mentioned in the previous chapter the Third Army had been making preparations for an offensive directed southwards against the right flank of the enemy's salient between Arras and Le Transloy, but, on the Germans withdrawing to the Hindenburg line, these were converted into preparations for a combined offensive of the Third and First Armies against the positions between Arras and Lens. For these operations the Third Army had taken over from the First Army the XVIIth Corps, which was occupying the sector between Arras and the Vimy Ridge, and with it, in January, also the casualty clearing stations (No. 30 and No. 42) in Aubigny. The VIIth Corps was in the sector south of Arras, and the VIth Corps in the Arras sector ; with the XVIIIth and XIXth Corps in back areas for divisions in reserve or brought back for rest.

The 1st, 2nd and 3rd Cavalry Divisions of the Cavalry Corps, with the headquarters of the corps, also moved into the Third Army area behind Arras, ready to exploit any successes of the divisions attacking the German line ; the 2nd Cavalry Division behind the VIIth Corps, the 3rd Cavalry Division behind the VIth Corps, and the 1st Cavalry Division behind the XVIIth Corps.

Medical Preparations for the Battle.

The Casualty Clearing Stations.—The D.M.S. of the Third Army (Surg.-General J. M. Irwin) had three main groups of casualty clearing stations, three at Warlincourt Halte (Nos. 20, 43 and 32) in the VIIth Corps area, three at Agnez-les-Duisans (Nos. 19, 41 and 8) in the VIth Corps area, and four at Aubigny in the XVIIth Corps area, No. 1 Canadian from the Second Army and No. 24 from Egypt having been added in March to the two already there.

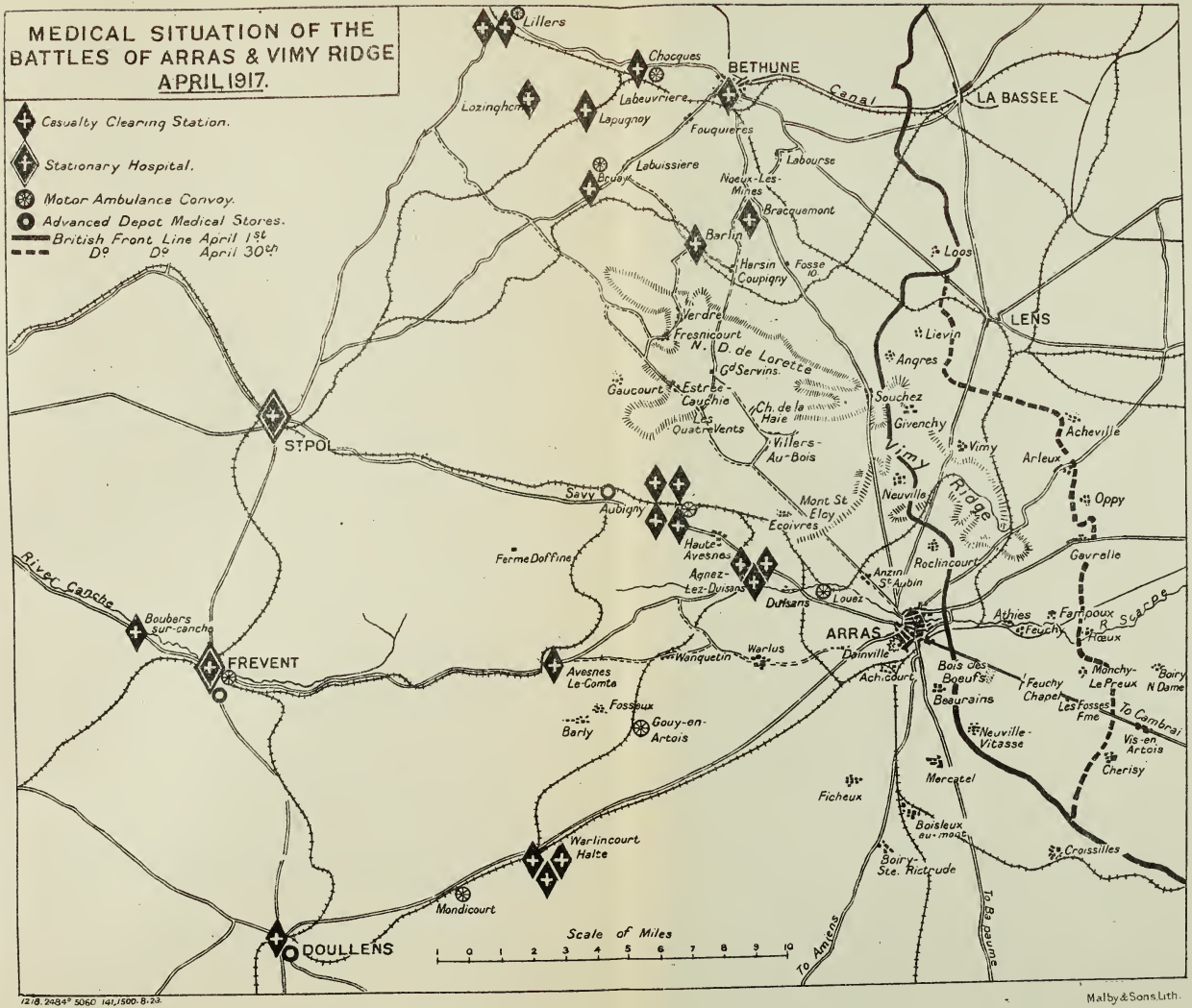
The Warlincourt Halte group was seventeen or eighteen miles distant from the front line of the VIIth Corps, and sites in a more forward position were considered, but until the enemy withdrew to the Hindenburg line sites further forward in this corps area were too dangerous, owing to their being exposed to hostile fire from the salient south of the Arras–Doullens road ; while after the Hindenburg line had been reached it was too late to organize for the Arras battle a new group of casualty

clearing stations in a more forward position. Casualty clearing stations consequently remained at Warlincourt Halte until after the battle, but an advanced operating centre for abdominal wounds and for urgent operations was opened at a main dressing station at Ficheux during April, some 11,000 yards behind the front line.

After the fighting in the Arras area had died down and the new line held by the British was advanced to between five and six miles east of Arras, the casualty clearing stations at Warlincourt were moved forward to the neighbourhood of Boisleux-au-Mont, between the Arras–Boiry Ste. Rictrude road and the railway line.

A broad-gauge railway was under construction from Warlincourt Halte to join the Arras–St. Pol line near Duisans by way of Wanquetin ; and Wanquetin was originally regarded as a suitable advanced site for the group of casualty clearing stations in the VIth Corps area ; No. 41 C.C.S. had been moved to it from Doullens at the end of 1916 before the railway had been completed. For military reasons, however, the site had to be abandoned as a casualty clearing station centre towards the end of February. A new site had been selected near the same railway line at Agnez-les-Duisans, where a group of three casualty clearing stations (No. 19 from Doullens, No. 41 from Wanquetin, and No. 8 from Bailleul in the Second Army area) was established by the beginning of March. An ambulance train siding was constructed to it from the new line of railway. The site was just south of the Arras–St. Pol road and not more than 11,000 yards from the VIth Corps front line. It was consequently within the danger zone of hostile artillery, and in fact enemy shells passed over it to the fields beyond, as well as doing damage in the village of Duisans, to the east of the site. The casualty clearing stations, however, remained untouched, and owing to their convenient proximity to Arras were not abandoned. They were allotted for the reception of wounded from the VIth Corps and for wounded in need of urgent operation from medical units of the XVIIth Corps.

The group at Aubigny was allotted for the reception of XVIIth Corps wounded. The two originally there were close to the railway station on the south of the line, one of them on the site and in the huts of a French clearing hospital ; but No. 1 Canadian and No. 24 Casualty Clearing Stations were opened under canvas in fields, with a bad approach road, on the north of the line. These latter were allotted subsequently for the reception of wounded from the First Army, but they remained



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for purposes of evacuation under the administrative control of the D.M.S. of the Third Army.

In addition to these groups for the three corps in the line, there was one casualty clearing station, No. 37, at Avesnes-le-Comte, another at Doullens, No. 62, and a third, No. 63, which had recently arrived from England, at Boubers-sur-Canche, in factory buildings on the Canche river, some three miles west of Frévent. These were used for the reception of sick from divisions in the line and back areas, and for slighter cases of wounds. There were also two stationary hospitals, No. 12 at St. Pol, and No. 6 at Frévent, to which wounded able to sit up were to be taken by road or by the narrow-gauge railway which ran from Warlus, through Avesnes-le-Comte, to Frévent.

On the 5th April each of the casualty clearing stations in the Warlincourt, Agnez-les-Duisans and Aubigny groups were reinforced by surgical teams, six teams being sent from casualty clearing stations in the Fifth Army, and four from the casualty clearing stations in the Second Army by order of the D.G.M.S. In addition the D.M.S., L. of C., was ordered on the 5th April to send a medical officer to each of these casualty clearing stations from base hospitals, and on the 12th April ten more medical officers were ordered to the Third Army casualty clearing stations from the Second Army. Fourteen nursing sisters, in addition to those who came with the surgical teams, were sent to the Third Army by the Matron-in-Chief, and ten more were subsequently sent to Aubigny on the 11th April. The hospitals at the base, however, were not called upon to supply surgical teams; but forty emergency stretcher bearers were sent for duty at the casualty clearing stations from the L. of C. before the battle and further reinforcements during the battle.

When the advanced operating centre was opened in the VIIth Corps area surgical teams and nursing sisters were sent to it; and also to an advanced operating centre which was opened on the 17th April in the Hôpital St. Jean in Arras by a field ambulance of one of the VIth Corps divisions.

In addition to these reinforcements from outside the Third Army, the D.M.S. of the army issued instructions for corps to send to each of the casualty clearing stations allotted for the reception of their wounded 3 officers, 3 N.C.Os. and 24 other ranks, or practically a tent sub-division, from field ambulances of their divisions. A number of men was also attached to the casualty clearing stations for temporary duty from labour and other units.

The casualty clearing stations of the Third Army receiving

the wounded from the battle front had thus from twelve to fourteen medical officers each in addition to dental surgeons and chaplains who assisted in the work, and a considerable reinforcement of nursing sisters, R.A.M.C. orderlies, stretcher bearers, and men of categories unfit for the fighting line.

The Motor Ambulance Convoys.—The motor ambulance convoys in the Third Army area were No. 3 at Gouy-en-Artois, No. 15 at Louez, north of the Arras–St. Pol road, about three miles from Arras, No. 24 at Aubigny and No. 16 at Frévent. The first three of these were placed at the disposal of the D.Ds.M.S. of the VIIth, VIth, and XVIIth Corps respectively, and No. 16 was retained under the direct control of the D.M.S. An additional convoy, No. 31, from the Fifth Army was temporarily attached by orders of the D.G.M.S. It was placed by the D.M.S. of the Third Army at the disposal of the D.D.M.S., VIIth Corps, owing to the length of the journey to the casualty clearing stations allotted for his wounded.

The convoys were supplemented by 45 charabancs or motor buses, 10 of which were given to the VIIth and VIth Corps and 20 to the XVIIth Corps, the remainder being kept under the direct control of the D.M.S. They were employed for the transport of sitting cases to Doullens, Frévent and St. Pol; and were still further supplemented by as many lorries as could be made temporarily available from army or corps resources and casualty clearing stations, in order to carry out the general policy of bringing as many of the sitting-up cases to the units on the main line of railway running through Doullens, Frévent and St. Pol, where they could be loaded into temporary ambulance trains and thus leave the lines leading to the casualty clearing station groups free for the permanent ambulance trains.

Evacuation from Casualty Clearing Stations.

The Third Army directorate of railway transport had garaged eight ambulance trains and three temporary ambulance trains in or near the casualty clearing stations before the attack was launched. During the first twenty-four hours of the battle, from 9 a.m. on the 9th April to 9 a.m. on the 10th April, all these ambulance trains and one of the temporary ambulance trains were available and took back wounded from the Third Army area. A maximum of journeys was reached during the next forty-eight hours, when twenty ambulance and five temporary ambulance train journeys were made during that time. The general arrangements for the running of the trains proved remarkably efficient, and there was never at any time delay or

difficulty in keeping the casualty clearing stations free from congestion. Altogether during the period of active hostilities in April the ambulance trains made 129 journeys and temporary ambulance trains fifteen to the area of the Third Army. The only mishap that occurred was on the 11th April, when an ambulance train from Warlincourt Halte came into collision with another train, but was able to continue the journey, although the line was blocked for several hours.

Medical and Surgical Supplies.

Advanced depôts of medical stores were placed at Savy, near Aubigny, Frévent, and Doullens ; and there was no lack of medical and surgical equipment or appliances.

Ample reserves of stretchers and blankets were also provided, and their distribution followed the method generally employed in previous battles ; 2,000 stretchers were issued by the D.M.S. of the Army as a reserve to each corps D.D.M.S. and 500 to each casualty clearing station. These arrangements were built up in association with more detailed preparations of the D.Ds.M.S. of each of the corps and the A.Ds.M.S. of divisions.

The Casualties.

The total casualties received into the Third Army medical units during April were 2,002 officers and 43,476 other ranks, of whom 135 officers and 3,722 other ranks were from other than Third Army formations. As in practically all the battles of the Western front, the maximum number of wounded was during the first twenty-four hours, when 445 British and 6 German officers, and 9,719 British and 1,350 German other ranks were admitted. The casualties amongst the personnel of the medical services were severe. Six officers and 57 other ranks were killed and eighteen officers and 278 other ranks wounded.

The Medical Services of the VIIth Corps.

The VIIth Corps was composed of the 21st, 30th, 56th and 14th Divisions, and held a line from Croisilles to the southern outskirts of Arras. A corps main dressing station was established at Gouy-en-Artois in twenty-seven Nissen huts ; and a walking wounded collecting station at Agny for the three divisions on the left and in the centre, and at Boiry for the 21st Division on the right of the attack. Each division opened an advanced dressing station, the 21st at Boiry Ste. Rictrude, the 30th at a position north of Boiry, the 56th at Achicourt, and the 14th at Rouville. The two former were a considerable

Advanced dressing station at Henin. Ornamental work by orderlies.

Main entrance to an advanced dressing station in a dug-out at Henin.

Road entrance to advanced dressing station in a dug-out at Henin.

distance from the front line, some four or five miles, but the two latter and the corps walking wounded collecting station at Agny were within a short distance of the communication trenches. A large corps rest station for the sick was formed at Barly between Warlincourt Halte and Avesnes-le-Comte.

The casualties in the corps were comparatively slight on the first day of the attack; the numbers received into the field ambulances being as follows between 6 a.m. of the 9th April and 6 a.m. of the 10th April :—

	Officers.	*Other ranks.*
21st Division	9	379
30th Division	24	396
56th Division	26	522
14th Division	32	553
Other formations	4	89
Germans	1	104
Total	96	2,043

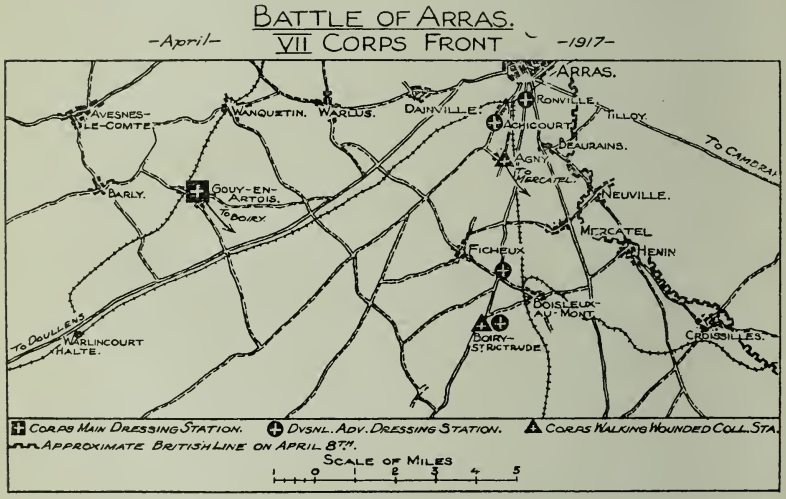
The D.D.M.S. of the corps, Colonel Swan, visited all the divisional advanced dressing stations, and corps and divisional walking wounded collecting stations during the 10th April and found them empty or practically empty, a fact which demonstrated the ease with which these numbers could be cleared from the battlefield by the general system of evacuation, which had now become a routine operation after the experiences of the Somme battles.

Until the 23rd April the work thrown on the medical services of the VIIth Corps continued to be comparatively light. In addition to the ten charabancs placed at his disposal by the D.M.S. of the army, Colonel Swan had seventy lorries during the first twenty-four hours from the corps, and was able to clear all his walking wounded from Agny to Doullens, a distance of twenty miles, with the greatest ease. For the clearing of the main dressing station to the casualty clearing stations he had No. 3 M.A.C. and a section of No. 31 M.A.C., the cars of which were brought up to Gouy.

Both the corps collecting station at Agny and the main dressing station at Gouy were moved forward on the 13th April, the former to Mercatel and the latter to Boiry Ste. Rictrude, the corps rest station moving from Barly into the huts left at Gouy by the main dressing station; but, although sites were being selected near Boisleux-au-Mont for the group of casualty clearing stations at Warlincourt, the move to the new site did not take place until after the battle. In view, however, of the long distance of Warlincourt from the front, an advanced

operating centre, as already noted, was opened towards the end of April at the corps main dressing station at Boiry Ste. Rictrude, but moved later into Nissen huts on the road from Arras, near Ficheux. The field ambulance there was reinforced by surgical teams and nursing sisters.

At this time the divisions of the VIIth Corps were preparing for a renewed attack on the 23rd April. The 14th Division had been relieved in the line by the 50th and the 30th by the 33rd Division after the earlier fighting of the 9th to 11th April; the 21st Division was also relieved and its front taken over by the 33rd Division on the 15th April, the corps then having three divisions in the line. The 30th Division again came into line



on the 20th April, relieving the 56th Division; and the attack on the 23rd April was carried out by the 33rd, 30th and 50th Divisions. The losses were only slightly heavier than in the attack of the 9th April, the wounded received into the divisional medical units being as follows during the twenty-four hours :—

	Officers.	*Other ranks.*
33rd Division	34	551
30th Division	23	529
50th Division	52	896
Other formations	3	71
Germans	2	56
Total	114	2,103

The corps main dressing station was capable of handling the casualties without difficulty. It had been organized to deal with 1,400 at a time, as well as to perform operations on and

retain abdominal and other urgent cases. As on the 9th April, the D.D.M.S. obtained a large number of lorries from the corps, and these, together with 18 charabancs, were employed for

Collecting post for cars at St. Martin-sur-Cojeul, near Henin, 1917.

clearing the walking wounded collecting station. For clearing the main dressing stations the D.D.M.S. had, as before, No. 3 M.A.C. and a section of No. 31 M.A.C.

Reception ward of advanced dressing station at Henin.

The 14th and 21st Divisions returned to the line in relief of the 50th and 23rd Divisions after this action; and the 18th Division from the Fifth Army came into the corps area and

relieved the 30th Division at the end of the month. The casualties, however, were comparatively few after the attack of the 23rd April, and there was little further to record affecting the medical services on the VIIth Corps front.

The Medical Services of the VIth Corps.

The VIth Corps held a narrow front of some 2,700 yards from the Cambrai road to the Scarpe, with the city of Arras behind it. The attack on the 9th April was launched by the 3rd, 12th and 15th Divisions, with the 37th Division and the 3rd Cavalry Division ready to pass through and continue the preliminary success. The chief problem in the medical preparations depended on the fact that all traffic had to pass through Arras. Consequently, it was anticipated that when the 37th and 3rd Cavalry Divisions commenced to pass through it would not be possible to get the wounded back to the casualty clearing stations during the first thirty-six hours of the battle. There were only two main roads leading from the town, the St. Pol road on the north-west, and the Doullens road leading to the Dainville–Warlus road on the west. Both these roads were likely to be congested with the traffic entering the town.

The D.D.M.S. of the Corps, Colonel H. N. Thompson, therefore made special preparations for the retention of wounded in what he designated advanced dressing stations, although in reality they were equipped and manned to perform the functions of main dressing stations, with the full resources of the field ambulance tent divisions, supplemented by other material specially obtained. They were established by each of the divisions in caves, cellars and basements of buildings, protected as strongly as possible with sandbags and overhead bursting courses, on the north-eastern, eastern and south-eastern outskirts of the town. The chief of these was in a large subterranean cave, from which stone had been excavated for building the town in the 16th century. It was close to the 3rd Division trenches and only 800 yards from the front line. Two inlets for stretchers were tunnelled into it from the communication trenches, and an outlet tunnelled out from the back into the Rue St. Quentin, where an approach was constructed for ambulance cars (see plan). This cave, to which the name of "Thompson's Cave" was given, was fitted with electric light and a piped water supply and was able to accommodate 700 wounded on stretchers in two tiers, together with dressing and operating rooms, kitchens and latrines. It was manned by field ambulances of the 3rd Division, but was in fact a corps

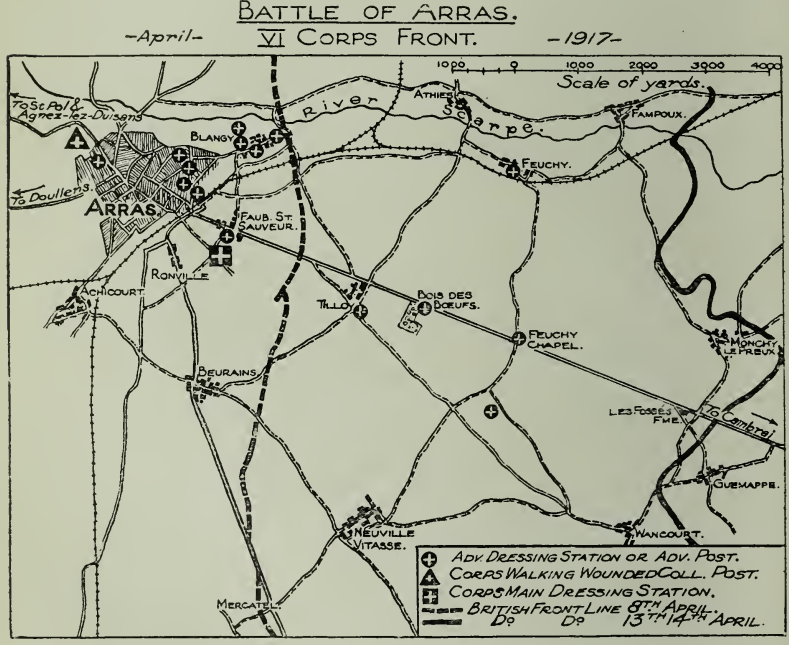
dressing station for severely wounded requiring urgent attention. Unfortunately on the 11th April a large shell exploded on the

PLAN OF "THOMPSON'S CAVE".
BATTLE OF ARRAS, APRIL 1917.

N
Entrance from Iceland St.
RUE DU TEMPLE.
A. WAITING WARD FOR ICELAND DRESSING ROOM CASES.
B. RESERVE STRETCHERS.
C. ICELAND DRESSING ROOM.
D. HUNTER WAITING WARD.
E. MEDICAL & QUARTER MASTERS STRS.
F. R.A.M.C. OFFICERS QUARTERS.
G. QUARTERS FOR R.A.M.C. PERSONNEL.
H. HUNTER DRESSING ROOM.
J. OPERATING THEATRE (SURGICAL SPECIALIST).
K. COOKHOUSE.
L. QUARTERS FOR RESERVE OR RESTING BEARERS.
M. MORTUARY.
N. OFFICERS WARD.
Entrance from Hunter St.
O. DYNAMO & WATER STAND PIPE.
P. EXIT LOBBY.
DEEP TRENCH LATRINES.
PASSAGES AND SPACES UNMARKED WERE USED AS WARDS.
Well fitted Cottage pump.
0 10 50 100
SCALE OF FEET.
RUE ST QUENTIN.
Exit to Rue St Quentin
Sweep for cars.

top of the cave and burst the water main, causing the roof to fall in in two places. Although no casualties occurred, it was

impossible to continue the use of the cave as a dressing station ; and two new dressing stations were then opened in the town, one in the Ecole Normale and the other in the Hôpital St. Jean, the latter becoming an advanced operating centre for abdominal wounds with special surgical teams attached to it, until it too in its turn had to be abandoned subsequently owing to shell fire. Fortunately the congestion of the traffic in Arras did not delay unduly the transfer of wounded from the dressing stations to the casualty clearing stations at Agnez-les-Duisans.



A corps collecting station for walking wounded was prepared in an extensive bomb-proof shelter of the bastion on the north-west corner of the town. It could shelter some 450 wounded at one time. Preparations were made in it for receiving, recording, feeding and dressing the walking wounded as they straggled in. Moats and a covered way bristling with guns surrounded the bastion, and the hopes of clearing the wounded by wheeled traffic from it were not promising. A duck-board path leading to the Dainville road was consequently made across the moats, and the wounded walked to the horsed ambulance wagons and motor buses drawn up behind the artillery

positions. The lightly wounded were thus conveyed to Warlus, whence they were taken by light railway to Avesnes-le-Comte and Frévent.

Pooling of Ambulance Cars.—Consequent upon the arrangement by which the divisional dressing stations were formed close to the communication trenches and the wounded taken from them direct to the casualty clearing stations, there was no normal zone of work for the motor ambulance transport of divisional field ambulances. Colonel Thompson consequently withdrew the motor ambulance cars from the field ambulances and pooled them with the cars of No. 15 M.A.C. He employed

Trench entrance to advanced dressing station, Wancourt.

them in clearing the dressing stations in Arras to Agnez-les-Duisans during the first phase of the battle. But when the line of the VIth Corps advanced, as it did by the 11th April, to some five miles east of Arras, advanced dressing stations had to be thrown out along the Cambrai road and the Scarpe valley towards Bois-des-Boeufs, Feuchy Chapel and Feuchy, leaving the tent divisions of the field ambulances as main dressing stations in the original positions in Arras. When this occurred, the D.D.M.S. restricted the work of the convoy to its normal function of clearing the dressing stations in Arras, and ordered the divisional ambulance cars to be restored to their units for their legitimate work of clearing the advanced to the main dressing stations. The disentanglement of the pooled cars,

however, from the convoy proved not so simple as was anticipated, and there was much delay in clearing some of the advanced dressing stations in consequence of the field ambulance cars failing to return to their units at once.

This was specially so in the 37th Division, which attacked and captured Monchy-le-Preux on the 11th April. At 4.30 p.m. the A.D.M.S. of the Division was informed by the D.D.M.S. of the VIth Corps that his motor ambulance cars would be returned to the division, and that No. 15 M.A.C. would in future only clear the dressing stations in Arras. The division had advanced dressing stations at Feuchy Chapel, full of wounded, in a concrete German aid post, and at Bois des Boeufs ; but no ambulance cars had reached them since noon. There were no signs of the cars at 9.45 p.m. and a telephone message to the D.D.M.S. did not have any effect. A despatch rider was sent to the motor ambulance convoy, followed by an officer at 10 p.m. urging the return of the cars ; but it was not till 1.30 a.m. of the 12th April that their arrival was reported to the A.D.M.S., when they were at once sent forward to the advanced dressing stations.

The incident raises a tactical question of some importance in the handling of the ambulance transport of medical units during a battle. In order to employ the ambulance cars of field ambulances in bringing back wounded from the dressing stations to the casualty clearing stations, when they would otherwise have been idle, was it necessary to pool them with the motor ambulance convoy cars and place them under the officer commanding the convoy ? Could they not equally well have assisted in the work of clearing the dressing stations in Arras under the direction of the A.Ds.M.S. of divisions and the officers commanding the units to which they belonged ? Had this course been adopted the clearing of the advanced dressing stations thrown out along the Cambrai road would have commenced automatically under the divisional A.D.M.S. without his having to wait for the disentanglement of his field ambulance cars from the convoy and their return to the division.

Instances of a similar nature occurred during the war. They emphasized the importance of avoiding the practice of pooling the field ambulance transport with that of motor ambulance convoys, a practice to which the D.G.M.S. administrative staff was consistently opposed.

Clerical Work at C.C.Ss.—Colonel Thompson made another innovation in the work of his medical services during the battle. He regarded the group of casualty clearing stations at Agnez-les-Duisans as his corps main dressing station and attached to

them a clerical staff from field ambulances of each of the divisions for the purpose of recording the admissions, such records being purposely omitted at the dressing stations in Arras. The names and particulars of each wounded man arriving at the casualty clearing stations were entered by this staff in the small forms supplied for the purpose.* These were periodically separated into bundles according to divisions and sent to the A.D.M.S. of the division concerned, who had the entries then made in the field ambulance admission and discharge books. A similar staff of clerks was appointed to the corps walking wounded collecting station, but the entries were made there direct into the admission and discharge books.

Interchange of Equipment at C.C.Ss.—Special arrangements were also made by Colonel Thompson for an interchange of stretchers, blankets, hot-water bottles and such instruments as artery forceps, between the dressing stations and the casualty clearing stations by means of a check ticket system. Each ambulance car driver handed in one half of a ticket with the details entered on it of the articles brought back with the patients, and obtained the corresponding number of articles on handing in the second half to an issuing store on his returning to the front.

These general arrangements in the VIth Corps are of interest and originality, and were undoubtedly advantageous in the early phases of the battle, when the jumping-off place for the divisions engaged was the town of Arras. Wounded were able to reach the casualty clearing stations from Arras in some cases within two hours of being wounded ; and there was considerable saving of dressings and time. But as the front advanced the tactical situation for the medical services became more normal in character. Echelons of advanced and main dressing stations, with separate zones of work for divisional and convoy motor ambulance cars, were established in accordance with the normal system of evacuation.

The Cavalry Advance to Monchy-le-Preux.

The operations of the Cavalry Corps, during the battle, as affecting the medical services, centre in the work of the 3rd Cavalry Division. This cavalry division moved to the north of Arras at 10 a.m. on the 9th April preparatory to carrying on the advance between the Scarpe and the Arras–Cambrai road

* A.F. W.3210.

to the area beyond Monchy-le-Preux, while the 2nd Cavalry Division followed up the advance south of the road and the 1st Cavalry Division the advance north of the Scarpe. The 3rd Cavalry Division went into action on the following day, but withdrew behind Arras again with few casualties. On the 11th April its 6th and 8th Brigades again joined in the attack on Monchy-le-Preux, and reached that village in support of the attacks earlier in the day by the 37th Division. Towards evening, as no further opportunity was given it for cavalry operations, it was withdrawn, after suffering heavy casualties, chiefly in the 10th Hussars and Essex Yeomanry of the 8th Cavalry Brigade.

Two squadrons, however, of the 10th Hussars and part of the 8th Machine Gun Squadron remained in the village until relieved on the night of the 12th/13th April. A regrettable incident then occurred in connexion with the work of collecting the wounded to the dressing stations further back.

In order to make intelligible the general disposition of the medical services with the cavalry divisions during this action a description of the organization of their field ambulances is necessary, as it differed essentially from that of the field ambulances of divisions. It will be recalled that during the advance to the Aisne in 1914 most of the cavalry field ambulances were organized as light and heavy sections, the former marching with and attached to cavalry brigades, and the latter marching behind the ammunition columns. When motor ambulance cars replaced the heavy horse-drawn ambulance wagons at a later period, this arrangement of light and heavy sections became a definite organization, the light horsed ambulance wagons remaining with the light sections and the motor ambulance cars with the heavy section. The light section was organized to provide an advanced dressing station, and the heavy section a main dressing station, but some of the cavalry field ambulances had prepared a special mounted section, the organization of which was brought to the notice of the G.O.C. of the Cavalry Corps, in a long memorandum by his D.D.M.S., Colonel F. J. Morgan, in February 1917. The intention was that there should be what he called a " pack mounted section " with each cavalry field ambulance capable of affording aid to wounded during a cavalry action on occasions when the whole resources of the

cavalry field ambulance would not be available.* It was anticipated that occasions might arise when cavalry would advance through a gap rapidly and far, over a trench system where ambulance transport could not follow, or when cavalry regiments would be widely separated from such assistance as could be afforded by cavalry field ambulances. The only means then of removing the wounded would be by hand carriage, and the "pack mounted section" was to carry along with the advancing cavalry brigades stretchers, medical equipment, water and blankets. These pack mounted sections were intended to form brigade collecting posts in touch with regimental medical officers, regimental aid posts, and the on-coming light moving sections, and to keep wounded collected in groups near roads until the state of the roads and the military situation permitted their being cleared by the light moving section ambulance wagons to the advanced dressing station.

It was this organization of cavalry field ambulances that went into action with the 3rd Cavalry Division on the 10th and

* Such a section for a British cavalry field ambulance was to consist of 2 officers, 10 mounted orderlies, 12 riding horses and 4 pack mules, each of 3 of the pack mules to carry 4 stretchers and 8 blankets, and the fourth 12 gallons of water in 6 petrol tins in 2 boxes, as well as medical comforts, splints and dressings.

The pack mounted section of an Indian cavalry field ambulance was slightly different, owing to the difference in its original organization. A mounted section had for a long time been organized by the 5th (2nd Indian) Cavalry Division, and consisted of 2 officers, 1 assistant surgeon, 20 other ranks, with 22 riding horses and 7 pack mules. Two of the pack mules were spare mules. Two of the others carried two Miller-James wheeled stretcher carriers each, a third rations and medical comforts, a fourth dressings and splints, and a fifth water. Four special stretchers for mounting on the stretcher carriers were constructed by removing the traverses and poles of the field stretcher and inserting the latter when in use into slots in the canvas body, and keeping them separate by a removable bar and ring traverses. The poles, when the stretcher was not in use, were carried lance fashion in a bucket attached to the stirrup of the mounted stretcher bearers, each of two bearers carrying a pole, and one of them also the canvas and traverses. The 2nd Indian Cavalry Division ambulances had commenced this organization shortly after their arrival in France, and it was after the Indian Cavalry Divisions had been amalgamated with the Cavalry Corps as No. 4 and No. 5 (Indian) Cavalry Divisions in September 1916 that the D.D.M.S. of the corps took up the question of pack mounted sections as a definite war establishment for cavalry some months later.

The composition, however, of the pack mounted sections varied according to the views of the officers commanding cavalry field ambulances, and the D.D.M.S. of the Cavalry Corps, just before the Arras operations, arranged that the pack mounted section should be formed of a minimum of 2 officers, 1 N.C.O., 5 orderlies and 2 pack horse leaders, with 10 riding and 2 pack horses. One of the pack horses was to carry 8 light jointed stretchers, and the other 6 gallons of water in 3 petrol tins of 2 gallons capacity each, dressings and medical comforts. Dressings and appliances were also to be carried in saddle bags on the orderlies' horses.

11th April. The following order was issued on the 8th April by the General Staff of the division :—

" Medical Arrangements for ' Z ' day.

" (*a*) All heavy sections C.F.As. will remain concentrated at Gouy under the orders of the A.D.M.S.

(*b*) Pack mounted sections will move with brigades under all circumstances.

(*c*) Light sections C.F.As. will be collected as soon as the division has carried out its first concentration, park just off the road in P.12.a.6.6* and await orders from the A.D.M.S.

(*d*) An advanced division dressing station will be established on the main Arras–Cambrai road about Les Fosses Farm, N.11.b.9.4,† when the division moves forward to its first objective.

(*e*) Divisional collecting station for walking cases will be established in the caves in Arras, where the Arras–Cambrai road runs into Arras."

On receipt of this order, which was attached to the divisional orders of the same date at 11 a.m., the A.D.M.S. of the 3rd Cavalry Division (Lieut.-Colonel D. Lawson) issued the following R.A.M.C. Concentration Order No. 1, and Operation Order No. 2 :—

" Medical Arrangements, 3rd Cavalry Division.

Concentration Order No. 1.

1. After zero hour + 2 on ' Z ' day the division will be standing to at one hour's notice.

2. When the division moves one light ambulance wagon and a corporal R.A.M.C. as wagon orderly will be detailed by each cavalry field ambulance to accompany the regiments of its brigade on their march to the eastern outskirts of Arras.

The wagon will follow closely after the rear regiment of the brigade, will collect all casualties and take them to the dressing station in the Grande Place, and then endeavour to pick up the brigade again.

At the railway crossing at the east outskirts of Arras the wagon will return and park in some available sheltered spot just off the main road, half-mile on the west side of Arras.

3. On the order to move being received the light sections in the order No. 8 C.F.A., No. 6 C.F.A., No. 7 C.F.A., will follow the 7th Brigade and park just off the road at the X road half-kil. N.N.E. of the X in FOSSEUX (Lens 11, 1/100,000) and await further orders from the A.D.M.S. Horses harnessed in but poles down.

Wheeled stretcher carriers will be kept ready for early use.

4. Combined heavy sections will remain in billets at Gouy ready to move at half-hour's notice.

5. Motor ambulance cars will move independently from Gouy not sooner than one hour after the light sections have moved and concentrate with light sections.

6. A subsequent move forward will take place with a view to bringing the division into a further position of readiness.

(*a*) In this move A.1 Echelons of Brigades, the Division Ammunition Column and A.2 Echelons will move into the area vacated by 7th Cavalry Brigade.

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* Between Fosseux and Wanquetin, and between eight and nine miles west of Arras.

† Just south of Monchy-le-Preux.

(*b*) As soon as the Divisional Ammunition Column followed by A.2 Echelon have moved off the light sections of C.F.As. in the order given will follow A.2 Echelon and move before the Mobile Veterinary Sections.

7. Units will clear roads and villages as far as possible when halted.
(*a*) When any unit receives the order to move, it will warn the unit in rear of it.
(*b*) As soon as the march is resumed all units will close up.

8. Zero hour is fixed at 5.30 a.m. on 9th April, Z + 2 = 7.30 a.m.
Issued at 1 a.m. 9.4.17."

"*Medical Arrangements, 3rd Cavalry Division.*
Operation Order No. 2.

8th April 1917.

Reference Map 51 B & C. (1/40,000).
Lens 11 (1/100,000).

1. Third Army is attacking east of Arras to-morrow. This attack will take place at zero hour, to be notified later.

2. The VIth Corps will assault the Wancourt–Feuchy line north and south of the main Arras–Cambrai road at approximately Z + 8 hours.
Should this succeed the 37th Division will attack Monchy-le-Preux and the ground north and south of it.

3. When Monchy-le-Preux has been seized the 3rd Cavalry Division will advance on its first objective, the line Vis-en-Artois–Boiry Notre Dame; the 50th Infantry Brigade, 17th Division, will be following the 3rd Cavalry Division.

4. (*a*) 8th Cavalry Brigade will be moving north of Monchy to Boiry Notre Dame.
(*b*) 6th Cavalry Brigade will be moving south of Monchy to Vis-en-Artois.
(*c*) 7th Cavalry Brigade will be in reserve in H. 33 central (51 B).*

5. (*a*) Pack mounted sections of cavalry field ambulances will accompany their respective Brigade Headquarters.
The O.C., C.F.A. or O.C., Section will get in touch with regimental medical officers as soon as practicable and deal with casualties, collecting them in groups under any available shelter and near roads or tracks.
A series of relay posts is to be established along the main Arras–Cambrai road, and casualties will be brought along that road and handed over to nearest relay party.
(*b*) Light sections of C.F.As. will be concentrated in accordance with attached concentration order No. 1 and be prepared to move off on quarter-hour's notice to form an advanced dressing station under orders from this office.
This dressing station will probably be in Les Fosses Farm, N.11.b.9.4 on the main Arras–Cambrai road.
Light wagons will be sent out to get in touch with pack mounted sections as soon as possible.
(*c*) Motor ambulance cars will move independently to the same concentration point as light sections, where they will be divisionalized under charge of the senior M.T. N.C.O. and await further orders from the A.D.M.S.
(*d*) The combined heavy sections, under command of Captain Slaney, R.A.M.C., will remain concentrated at Gouy, and await further orders, but be ready to move at half-hour's notice.
The O.C. combined heavy sections will be prepared to send forward on quarter-hour's notice 2 serjeants, 4 corporals, and 32 privates, R.A.M.C., to act as stretcher bearers.

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* Just north of the Arras–Cambrai road, about three miles from Arras.

Seven motor ambulance cars will be sent to convey this party. It will be formed into 8 squads, and each squad will carry 1 long stretcher, 1 blanket, and, if possible, 1 large water bottle or petrol tin of water.

(*e*) No. 12 Sanitary Section will remain at Gouy, and will be prepared to follow combined heavy sections if so ordered.

6. The A.D.M.S. will be at H.32 central (51 B).*

7. All walking wounded from the division will be directed to the Bastion collecting post, Arras. Lying and sitting cases will be taken to the nearest infantry advanced dressing station or the 'Cave,' A.D.S., Arras.

Copy No. 1 to G.S. 3rd Cavalry Division.
No. 2 to 'Q' ,, ,,
No. 3 to D.D.M.S., Cavalry Corps.
No. 4 to File.
No. 5 to No. 6 Cavalry Field Ambulance.
No. 6 to No. 7 ,, ,, ,,
No. 7 to No. 8 ,, ,, ,,
No. 8 to O.C. Combined Heavy Sections."

Accordingly when the 3rd Cavalry Division advanced on the 10th April the pack mounted sections moved with brigade headquarters. The casualties were few, and these sections were able to deal with them. Stretcher bearer parties went out from the light sections, but they were not required, and all returned to the bivouacs west of Arras at 9 p.m.

On the 11th April the pack mounted sections again went forward with their brigade headquarters, and at 12.30 p.m. the stretcher bearer party was sent along the Cambrai road to search the ground over which the cavalry had advanced. At 1.30 p.m. eighteen light ambulance wagons went forward to Feuchy Chapel, where the stretcher squads had brought the wounded, and where the 37th Division had an advanced dressing station.

The remainder of the light sections of Nos. 6 and 8 Cavalry Field Ambulances were sent out at 2.30 p.m. to form a dressing station as far forward as possible, but were unable to get beyond the Bois des Boeufs, three miles west of Monchy, where also an advanced dressing station of the 37th Division had already been established. The 3rd Cavalry Division order to form an advanced dressing station at Les Fosses Farm on the Cambrai road 1,000 yards south-west of Monchy-le-Preux could not be carried out.

The D.A.D.M.S., Captain Newman, who had been sent forward by the A.D.M.S. to form an advanced dressing station with the light sections, visited brigade headquarters and saw the Os.C. of No. 6 and No. 8 C.F.As. with their pack mounted sections at 4.30 p.m. Heavy casualties were then known to be

*At the Bois des Boeufs, two and a half miles from Arras on the Cambrai road.

west of Monchy, but neither of them told him that they required further assistance.

What followed is not very clear, but the A.D.M.S's. diary for the 11th April records that the light sections of the cavalry field ambulances were withdrawn with the division west of Arras at 9 p.m. They were working under his direct orders, and not under the orders of their commanding officers, who were at the time with pack mounted sections at headquarters of brigades. So far as the O.C. of No. 6 C.F.A. is concerned there appears to have been little difficulty. He states that after dusk on the 11th April stretcher bearers from the light sections collected wounded from the line Monchy-le-Preux–Les Fosses Farm, and evacuated them by the light ambulance wagons to infantry dressing stations, and that by 9 p.m., before the last regiment of the brigade was relieved, all casualties in the brigade had been evacuated, when the brigade moved back to billets on the racecourse west of Arras.

At 5.15 p.m. the following field message was issued by the G.O.C. of the division :—

> " The Division will withdraw west of Arras to-night. Wheels will move by road and remainder of division by cavalry track and will bivouac on the Champs des Courses (Ref. Lens 1/100,000) just west of Arras. Order of march 7th Cavalry Brigade, 8th Brigade, 6th Brigade, IVth Brigade R.H.A., C.F.As. A.i and A.ii échelons have already received orders to move. Any portions of A échelons now with units will move under the orders of those units. 6th and 8th Brigades will not withdraw until relieved by units of the 12th Division. IVth Brigade R.H.A. will remain in present positions until 7 p.m. when they may withdraw. C.F.As. will only withdraw on completion of evacuation of wounded of division. Supply sections will meet units on arrival. 7th Brigade will allot bivouac areas. Divisional Report Centre Zero exchange G.22.d.31."

At 5.55 p.m. the D.A.D.M.S. sent the following message to the A.D.M.S. :—

> " Impossible to open station at Les Fosses Farm. Am removing infantry and cavalry wounded from Maison Rouge dressing station on main road. Have sent forward stretcher squads to 6th and 8th Brigades and have seen Heap* and Downie*. Believe there are many casualties. Have also ambulance wagons on road just east of Feuchy picking up wounded. Many wounded just west of Monchy cannot be reached. Have no further information as to what is likely to happen in near future but think advance improbable."

At 6.15 p.m. the D.A.D.M.S. again sent a message to the A.D.M.S. to the following effect :—

> " Attached withdrawal order† is forwarded. I will remain here until wounded of division are evacuated. Please send me another motor cyclist in place of bearer. I will tell ambulance wagons to return here until I consider work is completed. I think your office can remain in Arras to-night. I am sending limbers back to Cavalry area Arras to await light wagons."

* Os.C. of No. 6 and No. 8 C.F.As. with the pack mounted sections.
† Field message of 5.15 p.m. as above.

At 7 p.m. the pack mounted section of No. 7 C.F.A. reported to the A.D.M.S. its arrival at the racecourse, but had nothing further to note with reference to the day's action.

The O.C. No. 8 C.F.A. joined his pack mounted section in a copse some 600 yards north-west of Monchy, where three of his horses, including a pack horse, were killed and two others wounded, rendering his pack section useless. He then came back with the remainder and reported the situation to the A.D.M.S. by a field message. About 5 p.m. he went into Monchy to find out the position of the wounded. There he found Captain Stork, the regimental medical officer of the Essex Yeomanry, and also Major Cowie of the R.H.G., and having satisfied himself of the position of the wounded he reported the facts to the officer in charge of the stretcher bearer party and rejoined his pack mounted section, returning with it at midnight to the racecourse.

Neither the A.D.M.S , who ordered the withdrawal of the light sections, nor his D.A.D.M.S., who was with them on the Arras–Cambrai road and in touch with the advanced operating centre, appears to have been aware that wounded of the 8th Cavalry Brigade were still awaiting evacuation from Monchy, and consequently there were neither pack mounted sections nor light sections of the 3rd Cavalry Division nearer than the racecourse on the west of Arras during the night of the 11th/12th April. The 12th Division was then taking over the front from the 37th Division and moving into the advanced dressing stations at Bois des Boeufs and Feuchy Chapel. The A.D.M.S. first received information of wounded still being in Monchy from the D.A.D.M.S. of the Cavalry Corps at 3 p.m. on the 12th April, and at 6 p.m. of that day the D.A.D.M.S. of the corps himself went to Monchy with a stretcher party, bringing back the O.C. of the 10th Hussars and thirty other wounded during the night of the 12th/13th, and reporting that some forty more were in the cellars there. These were eventually got out the following night by a large party of officers and dismounted men and by motor ambulance cars which went forward to Feuchy Chapel. About eighty wounded were brought back. Another party went into Monchy on the night of the 14th/15th April, but found only one cavalry wounded remaining there.

The bearers and transport of the field ambulances of the 12th Division also helped to clear numbers of cavalry wounded out of Monchy. The A.D.M.S. of the division was informed of the wounded being there by the G.O.C. of the 3rd Cavalry Division and by the G.O.C. of one of the brigades of the 12th Division

at 4 p.m. on the 12th April. He then gave orders to No. 37 Field Ambulance and all the bearers of the division to continue clearing Monchy-le-Preux until 6 a.m. on the 13th April. It was not possible to carry on this work in daylight owing to the approaches being under enemy observation and fire.

The fact of so many of the cavalry wounded having been left in Monchy during the night of the 11th/12th April brought at the time considerable criticism on the working of the medical services. The chief cause appears to have been the want of close touch between the A.D.M.S. and his divisional staff, from whom he had no information of the conditions in Monchy at the time the cavalry division was withdrawn. At the same time, as both the officers commanding No. 6 and No. 8 C.F.As. and the officer in charge of the bearer party seem to have known that there were wounded in Monchy on the night of the 11th April, it is difficult to understand why the information did not reach the A.D.M.S. through them, although they may not have been aware of the large number of wounded in Monchy or the urgency of clearing them during the night, or may possibly have understood that the 12th Division medical units, which were taking over the area, would clear the battlefield, notwithstanding the fact that the orders of the 3rd Cavalry Division made its field ambulances responsible for clearing the wounded before they withdrew.

This incident brings out certain lessons regarding the employment of the medical services with cavalry. The occasion was one of the very few on the western front when a cavalry division went into action otherwise than as dismounted cavalry. The chief lesson appears to have been the importance of a close touch being maintained between the officers commanding the cavalry field ambulances and the regimental medical officers in front and the stretcher bearers, ambulance transport and dressing stations behind. This duty was the duty of the officer commanding the pack mounted section of the ambulance. The O.C. of No. 8 C.F.A. had done what he considered necessary by finding out the position of the wounded in Monchy-le-Preux, getting in touch with the regimental medical officers there, and reporting the facts to the officer in charge of the stretcher bearer party, but apparently concluded that he had no further responsibility in bringing the wounded back. That this was a correct estimate of his responsibility is doubtful. The A.D.M.S. of the division had taken control of all sections of the field ambulances except the pack mounted sections. It is obvious, however, that he would not have permitted the light sections to be withdrawn during the night of the 11th/12th

April had he been informed of the situation. Neither his D.A.D.M.S., who was with the light sections, nor the officer in charge of the stretcher bearers, sent him this information, nor was he told of it by the staff of the division. His position was with what was known as A. echelon and not with the advanced report centre; and A. echelon appears to have remained far back during the whole action. In fact the A.D.M.S. himself went forward to Arras in order to be in closer touch with what was happening, and was there when the orders for the final withdrawal of the cavalry were issued. There was thus a want of direct touch in two directions, one between the A.D.M.S. and the staff of the advanced report centre, and the other between the A.D.M.S. and the combined light sections of the cavalry field ambulances which he undertook directly to control. These facts come out fairly clearly from the documents and orders, and show how unwise it is to dissociate the officer commanding a cavalry field ambulance from the responsibility of complete control of the whole of his unit during an action; and for the A.D.M.S. to be at the same time dissociated from the general staff.

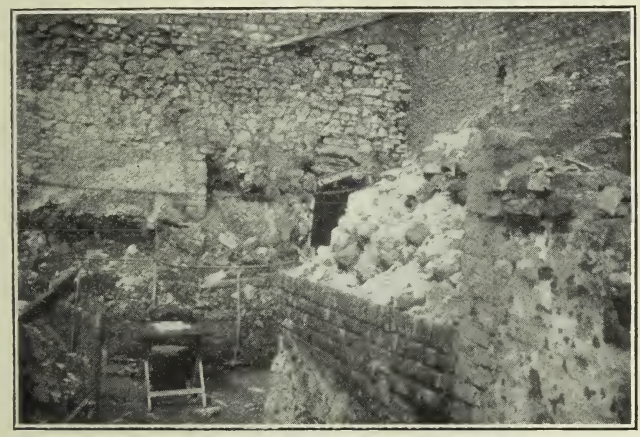
The fact, however, that there were large numbers of wounded in Monchy after the 3rd Cavalry Division was withdrawn appears to have been unknown at the advanced report centre at the time. The D.A.D.M.S. was in touch with this centre during the day, and no notice of these casualties reached him.

The incident had one good effect, for on subsequent occasions the A.D.M.S. remained at the advanced report centre, and attended all staff conferences. Previously he had not been ordered to attend these.

The A.D.M.S. after the action reported to the D.D.M.S. of the Cavalry Corps that he had come to the conclusion, after conversation with officers commanding his cavalry field ambulances, that the pack mounted section was useless, and a waste of officers, men and horses. As regards its equipment, the contents of saddle bags were not used at all. He stated that the cavalry could never have to work under harder conditions, and it was therefore useless to carry these bags and their contents. The stretchers being tied in a bundle on the pack saddle with blankets necessitated the whole load being undone to get one stretcher. In one case this resulted in all being left on the ground owing to shell-fire. They were recovered later. The method of carrying the water in petrol tins in boxes was a failure. The horses had considerable difficulty in getting over the muddy ground, and had to follow at a distance. The boxes were

not strong enough, the petrol tins broke through them, and the water was not used.

With regard to stretchers, there was considerable difficulty in getting the poles through the canvas when the canvas got wet and when working in a hurry. Besides, different parts of the stretchers were being carried on two horses, and they might not be together when the stretcher was wanted. The A.D.M.S. also considered that eight stretchers were more than could be used by the small number of men in the mounted section. He suggested that instead of the pack mounted section, the best plan would be to bring up about seventy-five stretchers and blankets in the lorry of the divisional sanitary section, and



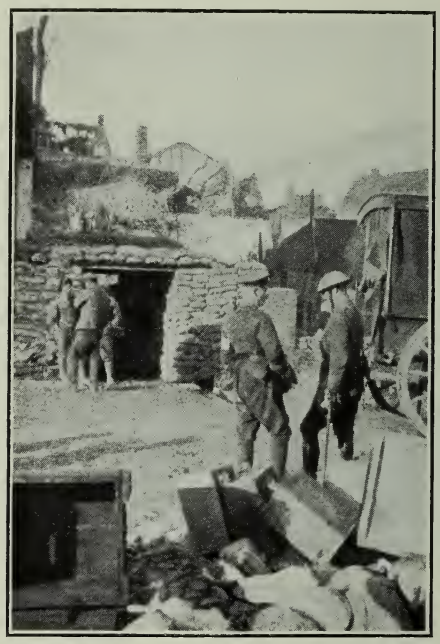
An advanced dressing station at St. Nicolas on the Arras Front.

after an action distribute them to men, obtained from regiments, for collecting and removing the wounded.

The Medical Services of the XVIIth Corps.

The divisions of the XVIIth Corps, 9th, 4th, 34th and 51st, fought on the line between Arras and the Vimy Ridge along the Scarpe valley. The D.D.M.S., Colonel Kirkpatrick, had formed a corps main dressing station with tent divisions of the field ambulances at Haute Avesnes, where there were huts erected by the French when they occupied the area in 1915. These had been supplemented by tents and Nissen huts. Advanced dressing stations were prepared at St. Nicolas, St. Catherine, the northern suburbs of Arras, and at Anzin

St. Aubin, three miles north-west of Arras, where a walking wounded collecting station was also prepared. A corps rest station was formed at Savy-Berlette near Aubigny. Divisional rest stations were also formed for the division on the left at Caucourt and for the division on the right at Ferme Doffine. The Savy rest station was used generally by the corps, but chiefly by the two central divisions, one in the line and one in reserve. No. 24 M.A.C., placed at the disposal of the



Advanced Dressing Station at St. Nicolas
Battle of Arras, 1917.

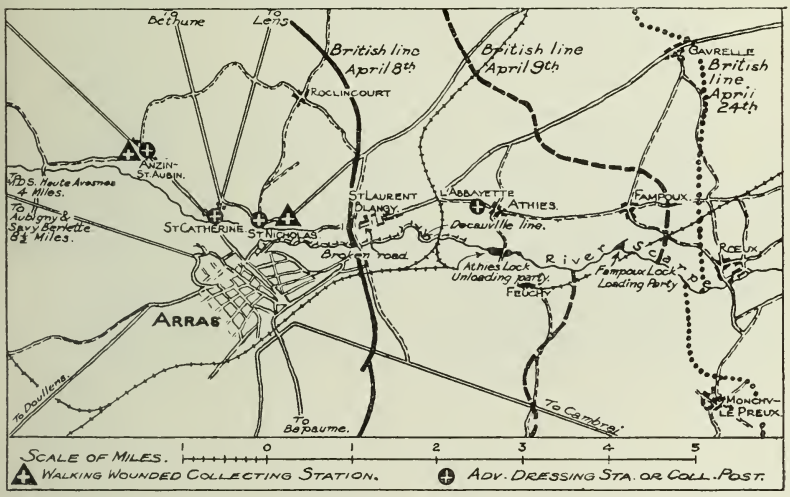
D.D.M.S., was stationed between Aubigny and the Arras–St. Pol road, a large reserve of blankets being stored with it. Trollies for use on the light railway for bringing ammunition and supplies to the trenches were adapted to carry back one stretcher case each on the return journey.

Heavy artillery had unfortunately been placed close to the walking wounded collecting station at Anzin, with the result that two or three days later, on the 30th March, considerable damage was done by an enemy shell which entered the roof of the R.A.M.C. billet and exploded. Other shells also fell near.

Twenty buses or charabancs were placed at the disposal of the D.D.M.S. for evacuating the walking wounded, the intention being to take them back to No. 12 Stationary Hospital, St. Pol. Empty lorries returning to railhead were also to be used by the walking wounded.

The casualties were heavy on the first day of the battle. By 6 p.m. of the 9th April 111 officers and 2,065 other ranks were collected. Evacuation proceeded so well, however, that the main dressing station and the walking wounded collecting station were practically clear then. From 6 p.m. of the 9th April to 6 a.m. of the 10th 77 officers and 2,101 other ranks

BATTLE OF ARRAS, APRIL 1917.
SCARPE VALLEY OPERATIONS.



were cleared. The attack had been launched by the 9th, 34th and 51st Divisions; the 4th Division passed through the 9th Division and carried on the attack, capturing Fampoux the same day. The wounded collected from 6 a.m. to 6 p.m. on the 10th April were then comparatively few, 30 officers and 628 other ranks. The number of walking wounded was, as anticipated, by that time small, and the chief congestion was in the corps main dressing station. In order to assist No. 24 M.A.C. in clearing it, 15 cars of No. 31 M.A.C. were attached to it by the D.M.S. of the Army.

On the 13th April the 51st Division on the corps left was relieved by the 2nd Division of the XIIIth Corps from the First

Army, and Anzin then came into the First Army area. The XVIIth Corps walking wounded collecting station was abandoned and divisional walking wounded stations formed further in advance.

On the 14th April the 34th Division sector was taken over by the 63rd (R.N.) Division, also of the XIIIth Corps, and the XVIIth Corps front was shifted further south along the valley of the Scarpe, the front line being held by the 4th and 51st Divisions, with an advanced dressing station and walking wounded collecting station at St. Nicolas, and main dressing station as before at Haute Avesnes.

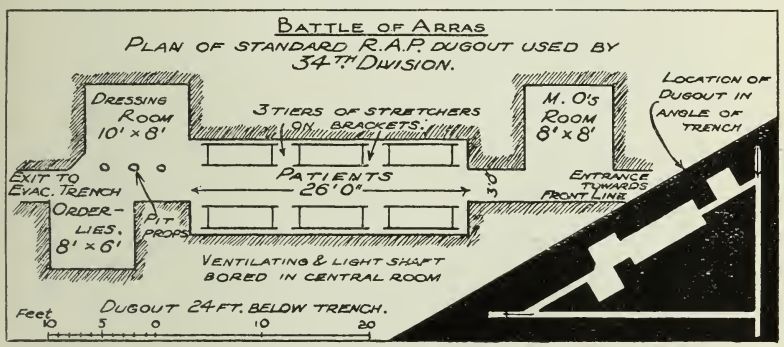
Street in St. Nicolas with ambulance cars. Battle of Arras 1917.

On the 20th April the 37th Division, which after the capture of Monchy had been resting in the back area, relieved the 4th Division, and its field ambulances took over the walking wounded collecting station, the main dressing station and corps rest station.

The 51st and 37th Divisions attacked on the 23rd April. Up to 6 p.m. 36 officers and 1,027 other ranks were collected to advanced dressing stations at St. Nicolas and east of St. Laurent-Blangy, and 63 officers and 1,266 other ranks during the succeeding twenty-four hours, the 51st Division being then relieved by the 34th. The attack was resumed on the 28th April, but with fewer casualties. For the subsequent operations on the Arras front the D.D.M.S. arranged for petrol tractor trollies to run between Athies and Arras on the light railway

along the tow path on the north bank of the Scarpe. Three trains carrying sixteen stretchers each were organized for this purpose.

When the XVIIth Corps front had advanced to Roeux, six pontoons were placed on the Scarpe between Fampoux and Athies locks. They were coupled together in pairs, and worked by the divisional R.E., each couple taking twelve stretcher cases. They proved of the greatest assistance in getting back severely wounded over the stretch of country between Fampoux and Athies. The wounded were brought to Fampoux and Fampoux Lock by relays of stretcher bearers and wheeled stretchers. From Fampoux itself they went back in ambulance cars and from the lock in pontoons to Athies Lock, where they were transferred to ambulance cars, and thence through a collecting post at L'Abbayette and an advanced dressing station at


BATTLE OF ARRAS
PLAN OF STANDARD R.A.P. DUGOUT USED BY 34TH DIVISION.
DRESSING ROOM 10' x 8'
3 TIERS OF STRETCHERS ON BRACKETS.
M. O.'S ROOM 8' x 8'
LOCATION OF DUGOUT IN ANGLE OF TRENCH
EXIT TO EVAC. TRENCH
PATIENTS 26' 0"
ENTRANCE TOWARDS FRONT LINE
ORDERLIES. 8' x 6'
PIT PROPS
VENTILATING & LIGHT SHAFT BORED IN CENTRAL ROOM
DUGOUT 24 FT. BELOW TRENCH.
Feet 10 5 0 10 20

St. Nicolas to the main dressing station at Haute Avesnes. There was great difficulty in getting the medical units forward owing to congestion of roads and the damage to roads by shell-fire. Consequently much of the material was brought up on pack horses.

The D.M.S. of the Third Army had estimated that the greatest number of casualties would be on the XVIIth Corps front, as it was much exposed to enemy fire, and provision had been made, especially by the A.D.M.S. of the 34th Division, for constructing regimental aid posts in dugouts according to a standard plan (see plan). The greater part of the Third Army front, however, north of the Scarpe was taken over by the XIIIth Corps of the First Army after the 12th April.

On the 30th April the A.D.M.S. of the 9th Division (Colonel F. A. Symons) was killed when walking to his advanced dressing station at St. Nicolas. The division had other heavy

losses in its medical personnel, the medical officer of the 11th Royal Scots, Captain T. W. Martin, and an officer of the South African Medical Corps, Captain I. Welsh, and three other ranks of the R.A.M.C. being killed on the 9th April; while eight of the R.A.M.C. and four of the S.A.M.C., were wounded.

Notwithstanding the difficulties and dangers of this front the general scheme for collecting and evacuating the wounded to Haute Avesnes and thence to Aubigny worked smoothly

The advanced dressing station at St. Nicolas on the road to Roclincourt.

and well. It was more complicated than that of the other corps of the Third Army, in consequence of the use of pontoons and tramlines, and the difficulties of bringing ambulance transport and material up through the congested and broken roads of the Scarpe valley.

Weather.

The weather during the earlier days and some of the later days of the battle was characterized by high winds, snow, sleet and rain. Fortunately the means of shelter and the accommodation for the wounded proved ample.

CHAPTER V.

THE BATTLE OF VIMY RIDGE.

THE operations leading to the capture of Vimy Ridge and an advance eastward of it were carried out from the 9th April onwards by the First Army at the same time as the Battle of Arras was being fought by the Third Army on its right ; but only a portion of the First Army was engaged, and consequently the number of casualties was not expected to be so great as on the Arras front.

Cars coming from Lille Road collecting post during the Battle of Vimy Ridge.

For some time before the attack the D.M.S., Surgeon-General W. W. Pike, had been preparing for the battle in association with Colonel Ross, the D.D.M.S. of the Canadian Corps, which, with a brigade of the 5th Division, was to make the attack on the 9th April. He had estimated the probable number of casualties at 20,000 during the first three days and 10,000 during the following week.

The Medical Services with the Canadian Corps.

The regimental aid posts were in dugouts, and these had been enlarged in many instances and greatly improved. The trenches leading from most of them were widened to facilitate

stretcher carriage, and arrangements were made to have certain trenches allotted for the use of the wounded only. Relay posts, along the line of hand carriage, were organized back to the advanced dressing stations.

The advanced dressing stations were, as a rule, in deep dugouts protected by steel or iron framework covered with sand-bags or earth to a depth of several feet, constructed so as to give good cover to the wounded and shelter for the R.A.M.C.

Roclincourt collecting post, showing snow during the Battle of Vimy Ridge.

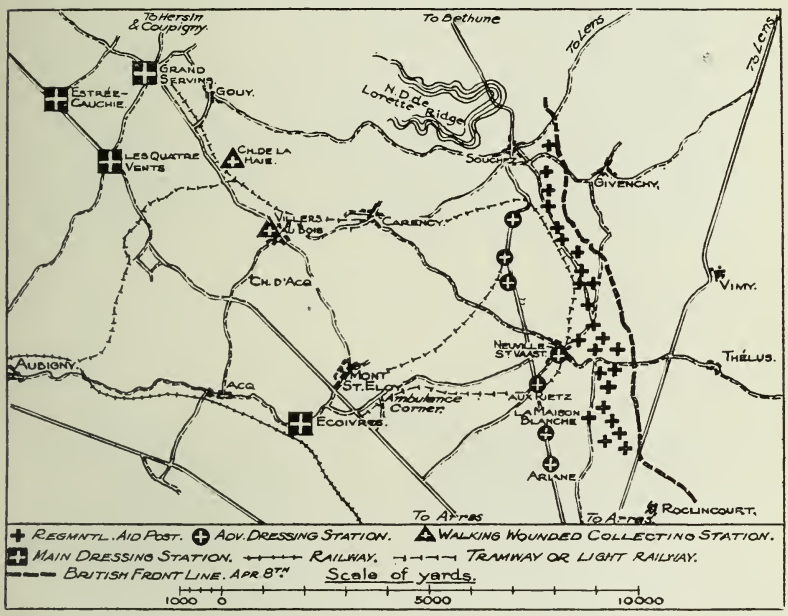
personnel. On the average each advanced dressing station could take about thirty or forty lying down cases. Other dressing stations were organized in cellars and basements of breweries, some of which had shelter for 100 or more.

Evacuation to advanced dressing stations was in some sectors by stretchers on trollies, and in a few cases by the horsed ambulance wagons.

Four main dressing stations were prepared behind the front of the attack, one at Ecoivres, another at Les Quatre Vents, a third at Estrée-Cauchie for sick only, and a fourth at Grand

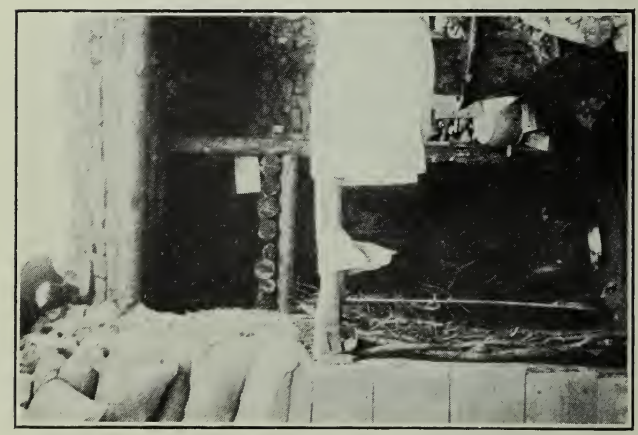
Servins. The main dressing station at Les Quatre Vents was organized with three or four tent divisions of Canadian field ambulances as a large corps main dressing station. It was capable of taking about 2,000 wounded at one time, the accommodation having been increased by forty marquees before the battle.

In addition to these main dressing stations, two large collecting stations for walking wounded were prepared, one at



Villers-au-Bois, and the other at Château-de-la-Haie. The walking wounded were brought thence by lorries to Hersin and Coupigny, where they were retained and taken care of by No. 13 Canadian Field Ambulance until they could be evacuated. Roads and paths were flagged and arrow indicators placed along them to guide the walking wounded to these collecting posts, and also to the routes of lorries returning empty to railheads. All these positions were in the Canadian Corps area until the XIIIth Corps took over the right of the Canadian Corps on the 12th April. The dressing station at Ecoivres then came into the XIIIth Corps area, wounded being evacuated

Interior of the advanced dressing station in a dug out at Aux Rietz below Vimy Ridge.



The advanced dressing station at Aux Rietz. (Labyrinth.)

from it to No. 1 Canadian and No. 24 Casualty Clearing Stations at Aubigny.

The medical situation in the Canadian Corps is shown on the map. The chief feature in the Canadian Corps arrangements was the use of tram lines for clearing from the regimental aid posts to the advanced dressing stations and still farther back. All these arrangements had been very carefully and elaborately organized.

The D.D.M.S. of the Corps had his headquarters at Les Quatre Vents. The 1st Canadian Division was on the right with its A.D.M.S., Colonel Ford, at Ecoivres. It had two advanced dressing stations, one at La Maison Blanche on the Arras–Bethune road, south-west of Neuville St. Vaast, and the other at Ariane at the cross-roads about one kilometre farther south. The 2nd Canadian Division was on the right centre of the attack with its A.D.M.S., Colonel Jacques, at Château d'Acq. The advanced dressing station was at Aux Rietz. The 3rd Canadian Division on the left centre had its A.D.M.S., Colonel Snell, at Villers-au-Bois, and an advanced dressing station at Neuville St.Vaast ; while the 4th Canadian Division on the left of the attack had advanced dressing stations along theArras road just south of Souchez, its A.D.M.S., Colonel Chisholm, being at the Château-de-la-Haie.

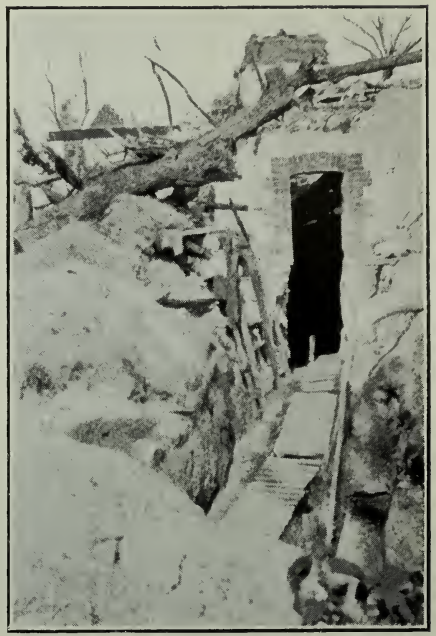
A tramway line ran from Neuville St. Vaast to Aux Rietz, and from there a light field railway went to what was known as " Ambulance Corner," just south of Mont St. Eloy, where the field ambulance cars were drawn up. As the road north of Souchez was impassable the principal route of evacuation to the main dressing stations was through Ambulance Corner and Mont St. Eloy.

The A.Ds.M.S. of the Canadian divisions were each allotted 100 extra men from the divisional troops to act as stretcher bearers and this greatly facilitated clearing the wounded back.

The number of wounded admitted to the field ambulances from the commencement of the battle until the 8th May was as follows :—

Division.	Officers.	Other ranks.
1st Canadian Division	147	3,926
2nd ,, ,, ...	110	2,808
3rd ,, ,, ...	82	2,166
4th ,, ,, ...	119	2,659
5th Division	53	1,415
Corps Troops	10	278
Total	521	13,252

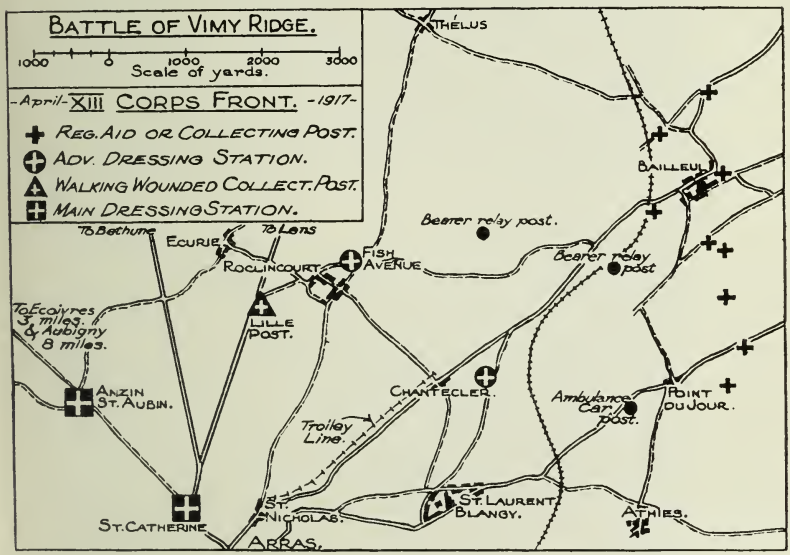
Regimental aid post in labyrinth at Neuville-St. Vaast. Battle of Vimy Ridge.



Collecting post at Neuville-St. Vaast. Battle of Vimy Ridge.

The majority of the walking wounded went to Coupigny and Hersin, and the lying-down cases to Les Quatre Vents, whence they were taken to the casualty clearing stations on the north side of the Notre Dame de Lorette ridge and the back area.

The Medical Services with the XIIIth Corps.

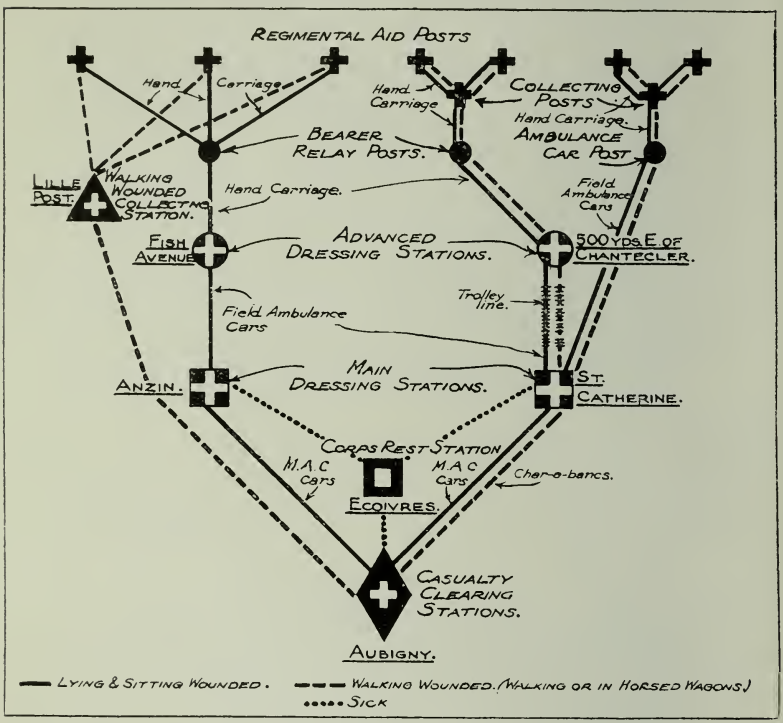


At the beginning of April the XIIIth Corps had been in the First Army reserve with the 2nd, 31st and 63rd (R.N.) Divisions in back areas in the neighbourhood of Pernes, St. Venant and Busnes. It then moved to the right of the Canadian Corps and took over the front line between the Scarpe and Vimy Ridge on the 12th April, the medical units of the 2nd and 63rd Divisions occupying posts previously held by divisions of the XVIIth and Canadian Corps. A section of No. 14 M.A.C. was placed at the disposal of its D.D.M.S., Colonel G. Cree, at that time, and when the Corps was engaged in severe operations against Oppy Wood on the 28th April, the whole of this convoy was attached to it. No. 14 M.A.C. was then stationed at Ste. Catherine.

The casualties of the XIIIth Corps were light, and there was no special feature or difficulty in the evacuation of the wounded.

The general arrangements of the medical situation during this attack on Oppy Wood are shown in the following plan.

BATTLE OF VIMY RIDGE.
DIAGRAM OF XIII CORPS EVACUATION ORGANIZATION APRIL 1917.

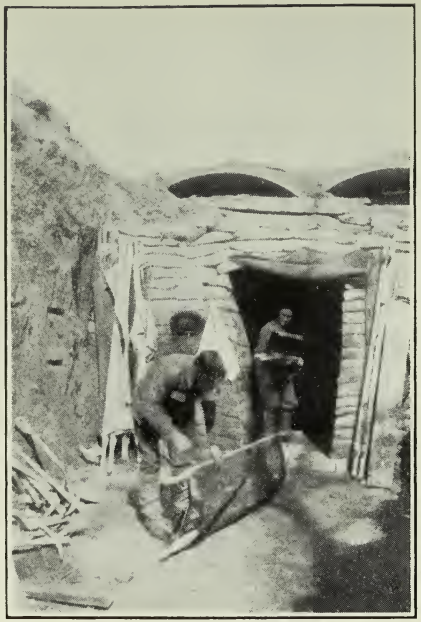


The Medical Services with the Ist Corps,

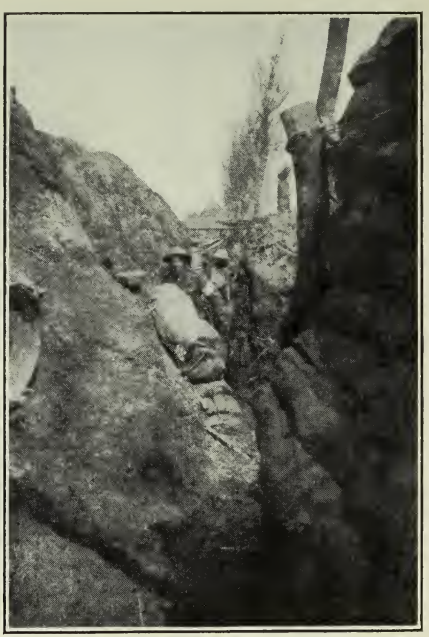
The Ist Corps was on the left of the Canadian Corps supporting the Canadian attack by pressure against Lens. The main dressing stations of the corps were in schools at Fosse 10 (Petit Sains), Noeux-les-Mines, Bracquemont, Labourse and Bethune. The arrangements generally were similar to those in the Canadian Corps area, except that the trolly system of evacuation was not so well developed.

The D.M.S. had arranged with the D.D.M.S. of the Ist Corps, Colonel Westcott, to prepare a large walking wounded collecting station with No. 73 Field Ambulance at Bracquemont capable of accommodating 1,500 wounded at a time, near the railway station there, and for temporary ambulance trains to run to it.

Collecting post, Lille Road, Battle of Vimy Ridge. Trench along which wounded were brought.



Exit from Lille Road collecting post. Battle of Vimy Ridge.



Field ambulance R.A.M.C. orderlies bringing mails to Lille Road collecting post in trenches at Roclincourt, Vimy Ridge, 1917.

There is no record, however, of its having been necessary to bring ambulance trains up to this position.

In addition to these dressing stations for wounded, large rest stations were available for the sick in the Canadian Corps area at Fresnicourt, and in the Ist Corps area at Fouquières and Labeuvrière.

Bearers preparing the ground for shelters at a dressing station at Anzin.

The two divisions of the Ist Corps specially engaged in the Vimy Ridge battle were the 46th and the 6th. They attacked in the direction of Lens from Liévin and Loos on the 23rd and 24th April.

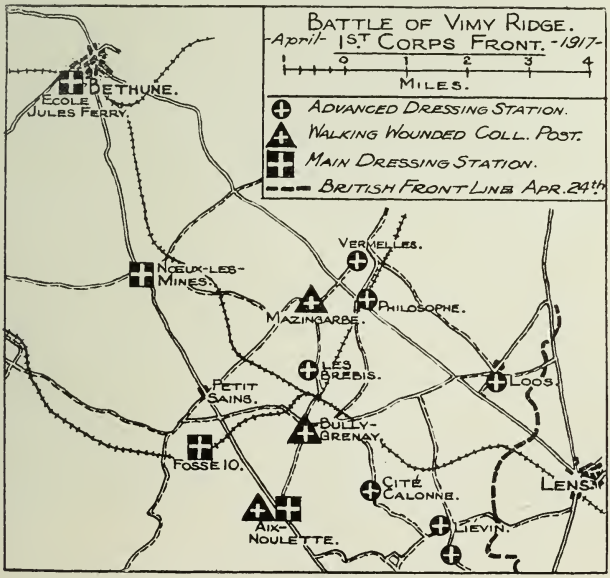
The A.D.M.S. of the 46th Division, Colonel W. Beevor, had special difficulty in getting the wounded away during the daytime on account of the enemy's artillery barrage along the lines of evacuation, and many severely wounded had to be detained by him in large cellars in Liévin during the day. In fact all roads leading out of this suburb of Lens were extremely dangerous. The nearest advanced dressing station for stretcher cases of the 46th division was at the Cité Calonne, between

Liévin and Grenay, with a main dressing station in a school at Fosse 10 (Petit Sains), and a walking wounded collecting post at Bully-Grenay, and also at Aix-Noulette.

The 6th Division medical posts were in and around Loos, with advanced dressing stations at Maroc and Philosophe, and a main dressing station at the Ecole Jules Ferry in Bethune. Its walking wounded collecting station was at Mazingarbe.

Dressing station built into a bank and protected by sandbags at Anzin.

The following sketch map shows the positions of the medical posts in the front area of this division.



The Casualty Clearing Stations.

With the exception of those at Barlin and Bruay, the sites of casualty clearing stations in the First Army were much the same as during the battle of Loos, namely, at Merville and St. Venant in the northern area, and at Bethune, Chocques, Lapugnoy, Lozinghem and Lillers in the southern area. Fort Gassion, at Aire, had been taken over by No. 39 Stationary Hospital. No. 22 C.C.S. had been moved from Aire to Bruay, and No. 6 from Lillers to Barlin, while No. 7 was transferred from Merville and opened in Bracquemont, the southern suburb of Noeux-les-Mines, on the 21st April, in the hope that the road from Souchez would be open then.

The casualty clearing stations had their accommodation largely increased by tents, marquees and huts, and were organized in separate sections for the reception of light and severe cases respectively. Wounded from the right of the attack were to be received in rotation by Nos. 6, 23, 18 and 22 Casualty Clearing Stations at Barlin, Lozinghem, Lapugnoy and Bruay, and those on the left of the attack by Nos. 33, 58 and 1, at Bethune, Lillers and Chocques, 300 being taken to each casualty clearing station in turn, with the exception of No. 6 at Barlin and No. 33 at Bethune, which had to take in severe cases for early operation at all times and which consequently were only to receive from the convoys 250 at a time. These numbers, however, were subsequently found to be too many, and were altered to 200 in the case of the casualty clearing stations farther back, and 100 to 150 in the case of No. 6 and No. 33.

Day and night signals were prepared at certain cross roads as a guide to the returning ambulance cars, indicating which of the casualty clearing stations was receiving. Indicators were also placed warning the cars of holes in the roads and other obstructions.

The seven casualty clearing stations receiving wounded from the front of the attack were reinforced each by a surgical team from the Fourth Army and from other casualty clearing stations of the First Army, in addition to a team from a field ambulance of each division of the First Army, consisting of 1 medical officer, 2 N.C.Os. and 8 other ranks. Emergency stretcher bearers and others were obtained from the L. of C. and army troops. In this way the casualty clearing stations that were receiving the wounded were reinforced by 41 medical officers and 41 nursing sisters, of whom 14 of the former and 34 of the latter came from outside the First Army. The

reinforcements of other ranks of the R.A.M.C. were 29 N.C.Os. and 128 other ranks, of whom only 7 were from outside the First Army. Fifty-nine emergency stretcher bearers were obtained from the L. of C. and 130 additional stretcher bearers from the First Army troops.

Each casualty clearing station had from 100 to 150 beds prepared on the same scale of equipment and comfort as beds in a general hospital for the severer class of cases whom it might be necessary to retain for several days before evacuation to the base.

West Riding, No. 58, Casualty Clearing Station at Lillers.

The Motor Ambulance Convoys.

The motor ambulance convoys in the First Army at the time were Nos. 2, 8, 12 and 13. No. 2, however, was employed in the northern area and for entraining duties at Merville, St. Venant and Aire. Of the remaining three convoys the D.M.S. concentrated two of them, No. 13 and No. 8, at Barlin and Labuissière for clearing the Canadian Corps main dressing stations, and No. 12 at Chocques for clearing the Ist Corps.

He formed two reserve convoys of eighteen cars each from field ambulance cars of divisions of corps not engaged. These reserve convoys were parked in their corps areas ready to move at an hour's notice. The convoys were supplemented by lorries and motor buses, but the D.M.S. found the latter unsuitable on account of roads and weather and made very little use of them. No. 14 M.A.C. was transferred temporarily from the Second Army and was at first concentrated with No. 13 Convoy at Barlin. The Second Army also sent ambulance cars on the 11th April from No. 5 M.A.C., but these were returned a few days later.

The D.M.S. of the Army kept the convoys under his direct control, as had been the custom in the First Army, but after the capture of Vimy Ridge and when the XIIIth Corps took over the right of the First Army, a section of No. 14 M.A.C. was placed at the disposal of its D.D.M.S., and eventually the whole of the convoy was placed under his control on the 26th April. At the same time No. 31 M.A.C. was attached to the Canadian Corps until the 26th April, when two of its sections were withdrawn to work with No. 8 M.A.C.

The main dressing stations were all on the southern part of the Notre Dame de Lorette ridge which ran east and west from Souchez and Mont St. Eloy to the Bruay–St. Pol road with a steep descent to the Flanders plain on its northern side. Consequently the motor ambulance convoys had to cross this ridge and descend by steep roads to Barlin and the other casualty clearing stations. The route selected was by way of Verdrel, a better and shorter route by way of Hersin being considered unsafe owing to hostile artillery fire. The direct road through Souchez was impassable.

Evacuation of Casualties.

The arrangement for ambulance trains was to garage five ambulance trains and two temporary ambulance trains daily in the army area, and to run the temporary ambulance trains to Hersin for evacuating the walking wounded collected there and at Coupigny.

The whole of the arrangements worked smoothly and well, and there was never at any time congestion in the area. The number of casualties in the first forty-eight hours was very much less than was anticipated, the admissions to the field ambulances up to 9 a.m. on the 11th April being 798 sick and 6,570 wounded. During that period 1,032 sick and 5,912 wounded were evacuated from the army area by nine

ambulance trains and three temporary ambulance trains, the latter taking away 2,486 from Coupigny alone. There were then left in the army area in field ambulances and clearing stations only 1,126 wounded and 1,686 sick. A few of the sick and wounded were also evacuated from the army area by ambulance cars, lorries, buses and barges to St. Omer, but the numbers were extremely small, only 15 wounded going back by ambulance car, 151 sick and 2 wounded by lorries, 96 wounded in buses, and 60 in barges.*

In the twenty-four hours from 9 a.m. on the 11th to 9 a.m. on the 12th April only 802 wounded were admitted to the field ambulances, and from that date to the morning of the 23rd April, during a period of comparative quiet, the number of wounded was 5,053, including 217 officers. The total number of wounded from 9 a.m. on the 9th April to 9 a.m. on the 23rd April amounted to 12,425, including 433 officers. The number of sick admitted during the same period was 8,145, including 291 officers.

During this period of comparative quiet,† constant work was carried on in improving the roads and in arranging for the use of trollies on tram lines.

On the 23rd April there was severe fighting in the Ist Corps from the direction of Liévin and Loos, and in the XIIIth Corps against Gavrelle, the number of wounded received during the twenty-four hours from the commencement of the attack being 96 officers and 1,711 other ranks. The fighting continued during the subsequent four days, but the casualties were then comparatively few, the total number of wounded admitted from 9 a.m. on the 23rd April to 9 a.m. on the 28th April being 181 officers and 3,323 other ranks.

The casualties amongst the medical services were severe. Between 9th April and 8th May the losses in the R.A.M.C.,

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* Nos. 2 and 5 Ambulance Flotillas were mobilized in anticipation of the battle. They had been demobilized during the winter months, when there was little fighting in the army area. The barges were being run in pairs, with one tug to two barges, but this was found unsatisfactory as if there was any wind they could not be steered properly. There was also the disadvantage of its being necessary to retain them at the loading point until 60 severe lying down cases suitable for conveyance by barge were waiting transfer from the casualty clearing stations. The D.M.S., therefore, arranged with the officer in charge of the flotillas at St. Omer to send up barges singly with as many tugs as he had for the purpose, and, although he had only six tugs available, the work was afterwards done better and cases were sent down more expeditiously than when the barges worked in pairs.

† Bethune was twice shelled during this time. On each occasion the patients in No. 33 C.C.S. were placed in cellars, and no casualties occurred.

Canadian and 63rd (R.N.) Division medical services were as follows :—

	Killed.		Wounded.		Died of Wounds.		Total.	
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.
R.A.M.C. ..	5	14	4	72	—	3	9	89
C.A.M.C. ..	—	10	5	78	—	—	5	88
Royal Navy ..	—	7	—	34	—	—	—	41
Total ..	5	31	9	184	—	3	14	218

It is of interest to note the number of wounded during the first five days of the battles of Arras and Vimy Ridge in the First and Third Armies, for comparison with the estimates made in preparation for them. The actual numbers, day by day, from 9 a.m. on the 9th April to the evening of the 13th April, as reported to the D.G.M.S., G.H.Q. were as follows :—

First Army.

	Officers.	Other ranks.	Germans.
9 a.m. 9th to 9 a.m. 10th	113	2,518	158
9 a.m. 10th to 9 a.m. 11th	72	3,867	404
9 a.m. 11th to 5 p.m. 11th	15	298	7
5 p.m. 11th to 9 a.m. 12th	9	452	14
9 a.m. 12th to 5 p.m. 12th	22	432	31
5 p.m. 12th to 9 a.m. 13th	19	364	11
9 a.m. 13th to 5 p.m. 13th	8	299	6
Totals from 9 a.m. 9th to 5 p.m. 13th..	258	8,230	631
Total		8,488	

Third Army.

	Officers.	Other ranks.	Germans.
6 a.m. 9th to 6 a.m. 10th	445	9,719	355
6 a.m. 10th to 6 p.m. 10th	75	1,934	246
6 p.m. 10th to 6 a.m. 11th	71	466	273
6 a.m. 11th to 6 a.m. 12th	168	3,753	460
6 a.m. 12th to 6 p.m. 12th	31	638	23
6 p.m. 12th to 6 a.m. 13th	42	1,394	13
6 a.m. 13th to 6 p.m. 13th	44	590	6
Totals from 6 a.m. 9th to 6 p.m. 13th..	876	18,494	1,376
Total	.. 19,370		

The total in the two Armies, therefore, was 27,858. The D.G.M.S. estimate of ambulance train requirements during the first five days was approximately for 37,000 wounded, so that there was a good margin of safety in the preparations, although this margin would probably have been much less had the retreat to the Hindenburg line not taken place before the battles.

The wounded collected during the first seven days, *i.e.*, to 9 a.m. on the 16th April, were, in the Third Army, 1,040 officers, 22,795 other ranks, and 1,108 Germans ; and in the First Army, 294 officers, 8,867 other ranks, and 620 Germans, or a total approximately of 34,700, as compared with the preparatory estimate for the first seven days of 44,000.

The activities on the Arras and Vimy front died down during May, although considerable pressure was maintained against the whole of the enemy's line from Lens southwards. The Third Army was then beginning to extend its front to the Somme in order to set free the Fifth Army for active operations in the Ypres Salient.

CHAPTER VI.

THE FLANDERS OFFENSIVES IN 1917.

THE offensive operations in Flanders, which were to take place after the battles of Arras and Vimy Ridge, commenced in June with the attack on and capture of the whole of the Messines–Wytschaete ridge and the advance of the British line a distance of $2\frac{1}{2}$ miles in the centre of the attack, to a new line southwards through Klein Zillebeke from the Ypres Salient to the neighbourhood of the Lys west of Warneton.

Changes in Army Areas.

During the preparations for the main offensive which was to follow, the areas and composition of the British armies in France and Flanders underwent extensive readjustment. The coast area between Dunkirk and Nieuport previously occupied by French troops was taken over by the British. The XVth Corps was detached from the Fourth Army in June and became an independent command directly under G.H.Q. in this area, but early in July the Fourth Army headquarters moved to Malo-les-Bains, the eastern suburb of Dunkirk, and took over the command.

The Fifth Army headquarters moved to Flanders during the second week in June and took over the Ypres Salient from the Second Army.

The Third Army then extended its front southwards by taking over the areas previously occupied by the Fourth and Fifth Armies. Its front area was thus facing the Hindenburg line from Arras to the vicinity of Epehy and Ronssoy, and continuous pressure was maintained against this line while the preparations for the Flanders offensive were being made. The Third Army headquarters moved from St. Pol to Albert.

The First Army also continued to attack the enemy both north and south of Lens and reached the outskirts of that town.

The Second Army remained in its original area until after the Battle of Messines, when, as noted above, its left sectors in the Ypres Salient were taken over by the Fifth Army.

The Changes in the Medical Situation of Armies.

These preparations involved considerable changes in the strategical position of the medical units. With the exception of the divisional sanitary sections, which remained in sanitary areas in accordance with the policy adopted earlier in the year, the divisional medical units accompanied their divisions to new areas.

Many of the casualty clearing stations, motor ambulance convoys, advanced depôts of medical stores, and mobile laboratories of the Fourth and Fifth Armies remained where

Rest area for field ambulance near St. Omer.

they were when the headquarters of these armies moved to Flanders. They came then under the control of the D.M.S. of the Third Army. Others were moved to the Ypres and Dunkirk areas.

After these moves had taken place in June and July the D.M.S. of the Third Army had eighteen casualty clearing stations, including the Indian, at his disposal, situated as follows :—

Lucknow	at Peronne la Chapellette	From 4th Army.
No. 38	at Bray	
Nos. 21 and 48 ..	at Ytres	
Nos. 5 and 55 ..	at Tincourt	

No. 56	.. ..	at Edgehill	From 5th Army.
Nos. 45 and 49	..	at Achiet le Grand	
Nos. 3 and 29	..	at Grevillers	
No. 9	.. ..	at Aveluy	
Nos. 20 and 43	..	at Boisleux au Mont	
Nos. 30 and 42	..	at Aubigny	
Nos. 19 and 8	..	at Agnez-les-Duisans	

He had also the following stationary hospitals :—

No. 6	.. ..	at Frévent
No. 12	.. ..	at St. Pol
No. 3 Canadian	..	at Doullens Citadel
No. 41	.. ..	at Gailly

Rest area for field ambulance near St. Omer.

The casualty clearing stations at Peronne-la-Chapellette, Colincamps, Varennes, Warlincourt Halte, Avesnes, Doullens, Gézaincourt and Boubers-sur-Canche had been closed, and apart from the single units at Bray, Edgehill and Aveluy, and the Indian C.C.S. at Peronne-la-Chapellette, the casualty clearing stations were in groups of two at Ytres, Tincourt, Achiet-le-Grand, Grevillers, Boisleux au Mont, Agnez-les-Duisans and Aubigny. The last group, however, was handed over to the First Army towards the end of August, thus reducing the number of casualty clearing stations in the Third Army to sixteen.

Seven motor ambulance convoys were left with the Third Army, namely Nos. 3, 15, 16, 30, 21, 27 and 36. Five bacteriological, three hygiene laboratories, and six advanced depôts of medical stores also remained with this army.

There were practically no changes at first in the positions of the medical units of the First Army; but in September and October, Surg.-General H. N. Thompson, who had succeeded Surg.-General Pike as D.M.S. of the Army in July 1917, when the latter was sent on special duty to East Africa, commenced moving casualty clearing stations to two advanced positions, under canvas, the one at St. Aubin, two and a half miles north-west of Arras, and the other in open fields on the Ruitz–Houchin road, west of Barlin. The casualty clearing stations at Barlin and St. Venant, which had been subjected to bombing from the air, were moved to these new positions. The Ruitz site was deliberately chosen as being at some distance from the railway line and other places likely to be shelled or bombed by the enemy. Aire ceased to be a casualty clearing station centre in May, when a stationary hospital, No. 39, took the place of the casualty clearing station in Fort Gassion.

Up to the time when the Fifth Army took over the Ypres Salient, the Second Army medical units were unchanged. In preparation for the Battle of Messines the D.M.S., Surg.-General R. Porter, whose headquarters were in Hazebrouck, had grouped four casualty clearing stations at or near Bailleul (No. 2, and No. 1 Australian in the town, No. 53 on the northern outskirts, and No. 11 at an ambulance train siding on the main line where the railway crossed the Armentières –Bailleul road), four at Remy Siding (Nos. 2 and 3 Canadian, No. 10 and No. 17) and two at Mendinghem near Proven (Nos. 46 and 12). There were single units at Trois Arbres (No. 2 Australian), Monts des Cats (No. 50), and Hazebrouck (No. 15). The motor ambulance convoys with the Second Army were No. 4 at Proven, No. 5 and No. 14 at Bailleul (the latter on return from the First Army on 20th May), No. 11 at Poperinghe, and No. 22 at Hazebrouck. The advanced depôts of medical stores were No. 2, No. 11 and No. 2 Canadian at Bailleul, Hazebrouck and Remy Siding respectively, and there were three bacteriological and one hygiene laboratory in the army at this period.

After the Messines battle the groups of casualty clearing stations at Remy Siding and Mendinghem came under the adminstrative control of the Fifth Army.

Owing to severe shelling of Bailleul in July and bombing of Hazebrouck in September, casualty clearing stations in these towns were closed. Those at Bailleul, except No. 53, which remained in the asylum north of the town, were moved to Oultersteene, three miles south-west of Bailleul, and to Godewaersvelde, while the casualty clearing stations and stationary hospital at Hazebrouck were transferred to Ebblinghem, halfway between Hazebrouck and St. Omer. Oultersteene then had two casualty clearing stations, No. 2 and No. 1 Australian, and Godewaersvelde three, Nos. 11, 41 and 37, the last having been transferred in July from Avesnes le Comte in the Third Army area.

The medical preparations which were made for the Fifth Army behind Ypres were of an extensive character, and every medical unit that could be spared was demanded by its D.M.S., Surg.-General Skinner, and sent to him. In addition to the groups of four casualty clearing stations at Remy Siding and the two at Mendinghem taken over from the Second Army, new groups were formed at Brandhoek, Dozinghem and Bandaghem in June, after the arrival of the Fifth Army headquarters in the area.

Dozinghem and Bandaghem were fancy names, similar to Mendinghem, given to new sites in open ground near broad gauge railway lines ; the former three miles north of Poperinghe in a clearing of the woods between Lovie Château and the convent north-east of it ; and the latter in fields about one mile south of Rousbrugge-Haringhe and some six miles north-west of Poperinghe. The site for the group at Brandhoek was close to the Ypres–Poperinghe main road about two and a half miles east of Poperinghe and between the road and the railway line. Nos. 4, 47 and 61 Casualty Clearing Stations were transferred from Varennes and Edgehill to Dozinghem ; Nos. 62 and 63 from Doullens and Boubers-sur-Canche to Bandaghem, and Nos. 32, 44 and 3 Australian to Brandhoek from Warlincourt, Puchevillers and Grevillers respectively. No. 13 C.C.S. was also transferred to the Fifth Army in August, but after being brought to Remy Siding and then to Mendinghem was not definitely opened until brought to a back area near Arneke four miles north-west of Cassel at the end of September. Surg.-General Skinner was thus provided with sixteen casualty clearing stations.

He was given five motor ambulance convoys, four being transferred to him from other armies, No. 4 at Proven from the Second Army, No. 31 and No. 24 from the Third Army, and

No. 20 from the Fourth Army. The fifth convoy, No. 6, was brought up from Beauval when the Fifth Army moved to Flanders.

Three advanced depôts of medical stores were transferred to the Fifth Army, No. 2 Canadian at Remy Siding from the Second Army ; No. 18 to Dozinghem from the Third Army and No. 31 to Proven from the L. of C. No. 19 which had been brought up from Peronne-la-Chapellette in July to the Second Army and opened at Godewaersvelde was also transferred to the Fifth Army in October and placed by the D.M.S. in Poperinghe.

Three mobile bacteriological laboratories were transferred, one each from the Second, Third and Fourth Armies, and a newly formed mobile hygiene laboratory, No. 23, was also sent to the Fifth Army and placed at Poperinghe. An additional mobile bacteriological laboratory, No. 17, was transferred from the Second Army in October.

A number of divisional sanitary sections proportionate to the size of the army area and the divisions in it were allotted to sanitary areas. Most of these were taken over from the Second Army in the areas over which they were carrying on sanitary duties at the time the Fifth Army came up to Flanders.

The Fifth Army was thus exceptionally well provided with medical units under the control of the D.M.S.

When the XVth Corps took over the Dunkirk–Nieuport area it had three divisions, the 1st, 32nd and 66th. Two casualty clearing stations, No. 1 Canadian and No. 24, were then transferred with it from Aubigny, and opened in fields near Oosthoek, on the railway line about one mile east of Adinkerke; the former unit occupied huts of a voluntary hospital, which had been working with the French in that locality. The staff of the voluntary hospital followed the French troops to Roosbrugge, and were given huts there by the British in exchange for those left by them at Oosthoek.

In July two more divisions, the 49th and 33rd, came into the area, and three casualty clearing stations, Nos. 36 and 39 from Peronne-la-Chapellette, and No. 34 from Tincourt, were then transferred to the coast area. No. 39 was added to the group at Oosthoek, while Nos. 36 and 34 were opened in part of a large modern sanatorium on the shore at Zuydcoote. The greater portion of the building continued, however, to be used as a hospital by the French Medical Service, which remained there after the French troops had left the area.

The Belgians had a large hospital at La Panne under the direction of Dr. Depage, whose surgical work had frequently

come under the observation of the British consulting surgeons. He had a large staff of nursing sisters, some of whom were English, and arrangements were made for the more urgent and severe cases of wounds to be sent to this hospital. An officer of the R.A.M.C. was attached to it for the purpose of discipline and maintenance of records.

Two motor ambulance convoys, Nos. 26 and 10, a mobile bacteriological and a mobile hygiene laboratory, and an advanced depôt of medical stores, were transferred from the Somme area to the coast and distributed to Malo-les-Bains, Zuydcoote and Oosthoek.

Malo-les-Bains, a sea-side suburb east of Dunkirk, was the headquarters of the XVth Corps until the Fourth Army Headquarters arrived. The corps headquarters then moved forward to Bray Plage. The building at Malo-les-Bains occupied by the XVth Corps headquarters office was wrecked on the 27th June 1917 by a long distance enemy shell, and the headquarters had moved to a large hotel on the sands further east. The coast area remained under the command of the Fourth Army from the 8th July until the 4th November, when the XVth Corps was withdrawn, and the area again handed over to French troops.

Outline of the Offensive in Flanders in 1917.

During the period June to November 1917 the offensive in Flanders was carried out in a succession of carefully prepared attacks by the Second Army in June against the enemy's positions on the Messines-Wytschaete Ridge; by the Fifth Army in association with the French troops at the end of July and during August against the positions in the Ypres Salient; by the Second and Fifth Armies in September, and by the combined Second, Fifth and French troops in October and November until active hostilities ceased in Flanders in the middle of the latter month.

In the Dunkirk area no active offensive was undertaken, but preparations were being made, during the time it was occupied by British troops, for combined operations with the Navy on the enemy's flank between Nieuport and Ostend, whenever the operations in the Ypres Salient afforded a suitable opportunity.

The Fifth Army headquarters left Flanders for the Somme area on the 14th November. The Second Army headquarters left at the same time for Italy, and were replaced by the Fourth

Army headquarters, the designation of the army in the Ypres Salient being changed on 20th December from Second Army to Fourth Army.

The Medical Arrangements.

The general details of the medical arrangements for these battles were similar to those described in the previous battles, more especially those of Arras and the Vimy Ridge ; but some important new features were introduced. Measures to deal with mustard gas, which was used by the enemy for the first time, were introduced. Surgical cleansing of wounds before evacuation to the base became the established method of treatment at casualty clearing stations, and the principle of retaining so-called shell shock cases in a casualty clearing station especially organized for their treatment in as advanced a position as possible was adopted in the Fifth Army.

These influenced to a very great extent the medical arrangements before and during the Flanders offensives in 1917 ; and it is chiefly in connection with them that the medical work of the battles differed from that of the previous battles.

CHAPTER VII.

THE BATTLE OF MESSINES.

THE battle of Messines was fought by the divisions of the IInd Anzac, the IXth and Xth Corps under the Second Army command. It commenced at ten minutes past three on the morning of the 7th June without previous bombardment by the explosion of nineteen large mines simultaneously beneath the enemy's defences followed by an attack by the troops under a creeping artillery barrage. The scheme of operations had been carefully prepared. One objective line after another was seized according to plan, the final objective being reached in the evening. The new line was then consolidated and with the exception of operations carried on to maintain the line against counter attacks the active offensive ceased.

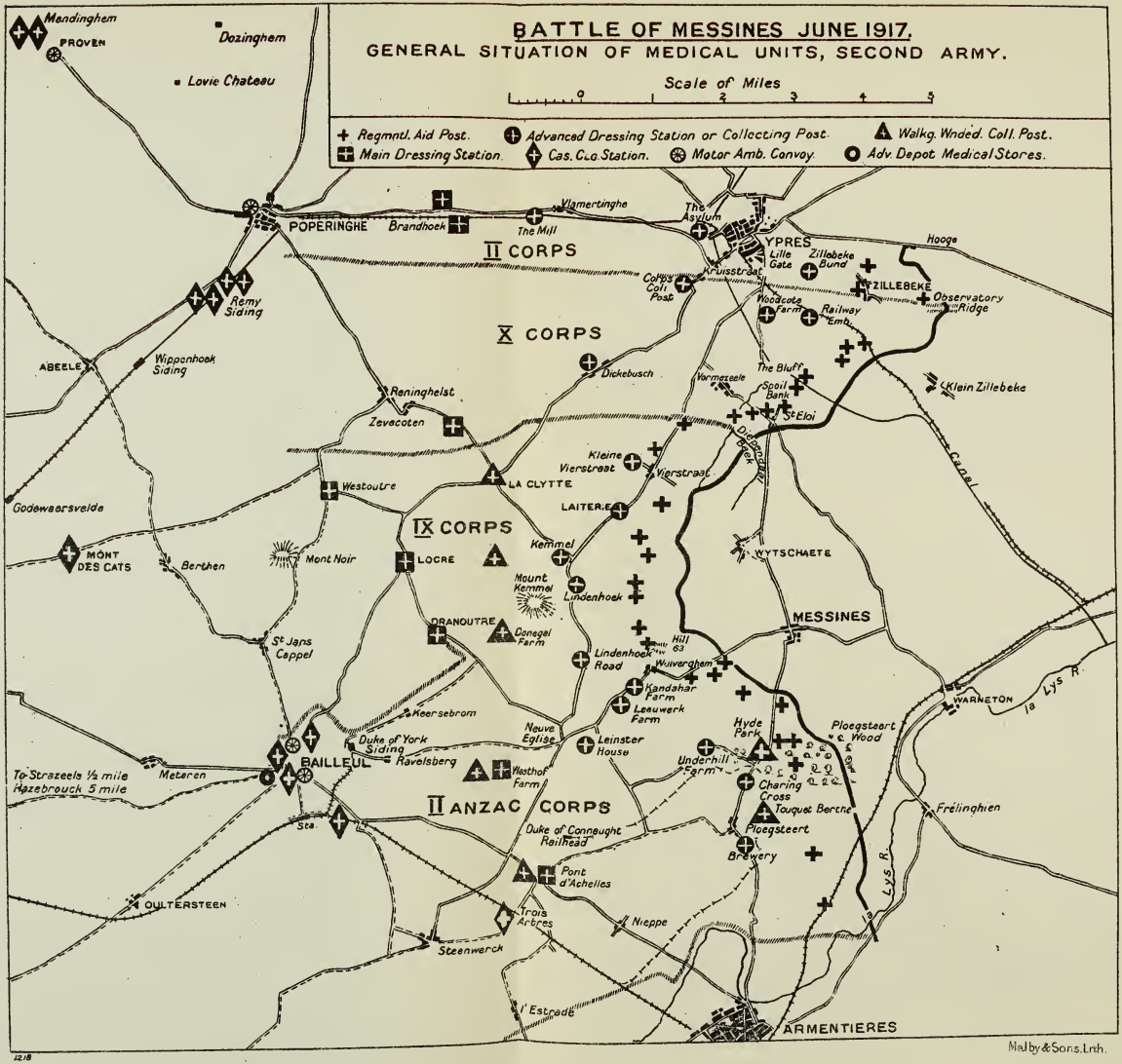
The General Medical Arrangements.

The general arrangements for the medical services were prepared with the same amount of care and detail as those for the attack.

The A.Ds.M.S. of divisions were made responsible for clearing the wounded from the firing line to the corps main dressing stations and corps collecting posts ; the D.Ds.M.S. of corps for clearing from these posts to the casualty clearing stations ; while the D.M.S. of the army co-ordinated the clearing of the casualty clearing stations to the lines of communication.

Regimental Aid Posts.—With regard to the work of the A.Ds.M.S. arrangements in most of the divisions had been made for eighty men to be kept as stretcher bearers in reserve at the advanced headquarters of each brigade, and supplies of stretchers were kept at regimental aid posts for them. Most of the regimental aid posts were connected by trench tramways with advanced dressing stations, and the majority of the wounded were brought down by these. The regimental aid posts had been increased in number and size, and strengthened.

Advanced Dressing Stations.—The majority of the advanced dressing stations were situated near a narrow gauge field railway which had been constructed along the whole front.



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The five advanced dressing stations of the IInd Anzac Corps were, roughly, from 1,700 to 2,700 yards behind the firing line, those of the IXth Corps some 1,500 to 2,500 yards, and those of the Xth Corps from 2,000 to over 4,000 yards, the farthest back being an advanced dressing station at Dickebusch.

A divisional collecting post of the Xth Corps, which had been established mainly for walking cases, was some 6,000 yards from the firing line, the walking cases being evacuated to it by the narrow gauge railway line.

Main Dressing Stations.—Two main dressing stations of the IInd Anzac Corps were respectively some 7,000 and 5,500 yards behind the firing line. Those of the IXth Corps at Dranoutre, Locre and Westoutre, 5,500, 6,000 and 8,000 yards respectively, and those of the Xth Corps at La Clytte road and Brandhoek, 6,500 and 10,200 yards. All of them were equipped with seven special sets for giving oxygen to gassed cases.

Large numbers of the slighter cases and of the lightly wounded were transferred direct from them to divisional rest stations.

Motor Ambulance Convoys.—A motor ambulance convoy was allotted to each of the corps by the D.M.S. for the evacuation of the seriously wounded from the main dressing stations to the casualty clearing stations. For the conveyance of lightly wounded to the casualty clearing stations thirty lorries were placed at the disposal of each corps D.D.M.S.

Casualty Clearing Stations.—The casualty clearing stations to which the wounded were evacuated were Nos. 46 and 12 at Mendinghem, Nos. 10 and 17 and Nos. 2 and 3 Canadian at Remy Siding, Nos. 2, 8 and 53 at Bailleul, No. 11 on the railway line south of Bailleul, and No. 2 Australian at Trois Arbres, or eleven in all ; but the groups of casualty clearing stations at Remy Siding and Mendinghem were transferred to the Fifth Army at noon on the 10th June, and No. 11 C.C.S. was closed on the 9th June owing to the enemy shelling its position at the ambulance train siding with long range high explosive shells. During the three days in which it was receiving wounded a total of 4,210, chiefly walking wounded, were brought to it.

Each of the casualty clearing stations had been expanded to accommodate 1,000 wounded, and had been reinforced by extra personnel two days before the battle. Additional operating tables and at least 100 fully equipped hospital beds had been provided in each. The additional personnel at each of the eleven casualty clearing stations were three surgical teams, three additional medical officers, from six to twelve

additional nursing sisters, and twenty other ranks of the R.A.M.C. The surgical teams were obtained from casualty clearing stations of other armies.

In addition to these eleven casualty clearing stations, the Second Army had two casualty clearing stations in back areas, No. 50 at Mont des Cats, and No. 15 at Hazebrouck, to which sick and wounded could be transferred if necessary.

A labour company was allotted to act as stretcher bearers at the casualty clearing stations, thirty men being distributed to each, and thirty to each of the ambulance train sidings. The work of loading and unloading patients at the casualty clearing stations was mainly carried out by them.

The general distribution of wounded to casualty clearing stations was for the main dressing stations of the northern sectors of the Xth Corps to be cleared to Mendinghem, those of its southern sector and the northern sector of the IXth Corps to Remy siding, those in the southern sector of the IXth Corps and northern sector of the IInd Anzac Corps to the casualty clearing stations at Bailleul, and those in the southern sector of the IInd Anzac Corps to the Australian casualty clearing station at Trois Arbres. Two casualty clearing stations, No. 11 and No. 3 (Canadian) were intended to receive walking wounded only.

Casualty clearing stations, with the exception of those set apart for the reception of the lightly wounded, received patients in rotation, 150 at a time. This enabled surgical operations to be carried out with the least possible delay, and in fact during the first three days of the battle as many as 2,400 major operations were performed.

The total number of wounded was considerably less than was anticipated, and at no time was there any difficulty in dealing with them in the medical units. There were many more in the area of the IInd Anzac Corps than in the corps farther north. They began to arrive very early at Trois Arbres and Bailleul casualty clearing stations, in fact, in little over an hour after the attack commenced. The evacuation of wounded from the regimental aid posts to the corps main dressing stations was thus extremely rapid. The chief difficulty was felt at Bailleul where the casualty clearing stations were in buildings with narrow approaches and situated some distance from each other. Owing to the simultaneous arrival of cars bringing wounded and cars for evacuating wounded to the ambulance trains in the narrow approaches to the casualty clearing stations in the town it became necessary to increase the numbers received in rotation in the casualty clearing stations at Bailleul to 250 lying down

cases, so as to give time for evacuation to take place before convoys began to arrive with fresh cases. This difficulty at Bailleul was consequently only very temporary.* The rapid evacuation of wounded to the casualty clearing stations was in a measure due to the arrangements which had been made before the battle to distribute sterilized dressings in suitable sizes to the field ambulances for use at the regimental aid posts and dressing stations, thus reducing considerably the time taken to prepare wounded for further transport.

The Ambulance Trains.—During the first three days of the battle thirty-five ambulance trains or temporary ambulance trains were used. Sixteen trains had been garaged in the army area before midnight of the 6th/7th June, and each train as it moved up to the casualty clearing stations was replaced by another from the garage. On the first day ten ambulance trains and two temporary ambulance trains ran from the casualty clearing stations to the base; on the second day twelve ambulance trains and three temporary ambulance trains, and on the third day eight ambulance trains and no temporary ambulance trains.

The Medical Services with Divisions and Corps.

The arrangements for the work of the medical services in the divisions and corps engaged in the battle were of a very complete and methodical character in all.

IInd Anzac Corps.—The advance of the IInd Australian and N.Z. Corps was against Messines in the southern sector on the right of the battle.

The divisions engaged were the 3rd Australian (A.D.M.S., Colonel A. T. White), the New Zealand (A.D.M.S., Colonel D. J. McGavin), and the 25th (A.D.M.S., Colonel H. I. Pocock). The 4th Australian Division (A.D.M.S., Colonel G. W. Barber) was in support. It passed through the New Zealand Division and 25th Division in the afternoon of the 7th June and carried on the attack with the 3rd Australian Division.

The medical arrangements were dominated by the physical features of the corps area. A hill, known as Hill 63 just north of Ploegsteert Wood, stood out between the right and left sectors of the attack. The D.D.M.S., Colonel C. W. Begg, N.Z.M.C., consequently organized two lines of evacuation, one to the south and one to the north of the hill.

* A similar difficulty had occurred in the Ypres battles of 1915, when special arrangements had also been made to deal with the rapid arrival of wounded at Bailleul.

A corps main dressing station and a corps walking wounded collecting station for the southern area were established at Pont d'Achelles, where a road from Ploegsteert joins the main road between Armentières and Bailleul. This served for the reception of wounded coming down from advanced dressing stations and collecting posts on the south and north-east of Ploegsteert Wood. The advanced dressing stations were at the Brewery south of Ploegsteert, and at points known as Charing Cross and Underhill Farm, with collecting posts for walking wounded at Touquet Berthe and Hyde Park, the latter between the Brewery and Charing Cross, and the former east of Underhill Farm. A narrow gauge railway had been constructed in a circuit running near these posts and leading through Romarin to a railhead, called the Duke of Connaught railhead, about 1,000 yards north of Pont d'Achelles. The walking wounded were brought down to the railhead on trollies and from there went on foot to the dressing station.

From Pont d'Achelles the wounded on stretchers were evacuated by motor ambulance convoy to No. 2 Australian C.C.S. at Trois Arbres, about one mile south-west of Pont d'Achelles. The slighter cases of wounds and sickness went to divisional rest stations, formed by field ambulances at Steenwerck and L'Estrade, about one mile south-east of Steenwerck, or to No. 11 C.C.S. at the ambulance train siding south of Bailleul.

North of Hill 63 in the sectors from which the New Zealand and 25th Division made the attack, sites for a corps main dressing station and walking wounded collecting station were prepared near Westhof Farm, one mile south-west of Neuve Eglise. They received the wounded from advanced dressing stations at Kandahar Farm on the Neuve Eglise–Wulverghem road and at Lindenhoek road one mile north of Neuve Eglise ; and from collecting posts, Leinster House and Leeuwerck Farm, south-east and east of Neuve Eglise. This area was hilly and consequently narrow and broad gauge railways did not run into it to the same extent as in the southern area, but tram lines were run from the trenches to the advanced dressing stations.

Wounded were taken by convoys to the casualty clearing stations in Bailleul.

Divisional rest stations for the New Zealand and 25th Division were at Ravelsberg, about two miles east of Bailleul on the Neuve Eglise road and in Bailleul.

Personnel for the corps main dressing stations and corps collecting stations consisted of a tent subdivision from each of

the field ambulances of the divisions engaged. Each of the field ambulances of the two Australian divisions provided the sub-divisions for the Pont d'Achelles dressing and collecting stations. They were placed under the command of Lieut.-Colonel F. A. Maguire of No. 9 Australian Field Ambulance. At Westhof the field ambulances of the New Zealand and 25th Divisions supplied the six tent sub-divisions, under the command of Lieut.-Colonel H. B. Kelly of No. 77 Field Ambulance. By this arrangement the divisions retained all their field ambulances as mobile units. A tent sub-division of No. 4 New Zealand Field Ambulance was also detailed to detrain patients at the Duke of Connaught railhead and conduct them to Pont d'Achelles; and a medical officer of the Australian Army Medical Corps was detailed to act as medical railway transport officer and supervise generally the entraining and detraining of wounded at the various points on the narrow gauge line.

Colonel McGavin of the New Zealand Division was placed in charge of the general arrangements for clearing wounded to the main dressing station.

The following clear and precise orders were issued by the corps. They are a good example of orders for the medical arrangements during a battle. These orders were adhered to with very minor alterations.

"IInd Anzac Corps Medical Arrangements.
Battle of Messines.

In the proposed scheme, the principle of working with one corps main dressing station has had to be modified by the fact that the area is divided by Hill 63 into two approximately equal parts. In order to fall in with the general scheme of traffic control, it is necessary to establish two corps main dressing stations. One of these will deal with cases from the north, the other from the south of Hill 63.

Similarly, the line of evacuation from the north area will be to casualty clearing stations in Bailleul, while from the south cases will go to Trois Arbres.

Medical personnel available :—
12 Field Ambulances.
1 Motor Ambulance Convoy.
All available P.B. men.

C.C.S.—The scheme is based on casualty clearing stations at Trois Arbres and at Bailleul, with special accommodation for walking cases at both places. Certain casualty clearing stations will be set apart for special cases.

Stretcher Cases.—Responsibility for the conveyance of wounded to the regimental aid posts rests with battalions and brigades. The arrangements necessary for reinforcing the small stretcher bearer establishment should be made before the action. Medical personnel from field ambulances should on no account be used for this purpose.

A.D.S.—Field ambulances take over cases at the regimental aid posts and convey them by hand carriage, wheeled stretchers, etc., to advanced dressing stations. Trench tramways should be made use of, and special

" gates " for carrying five stretchers on a truck should be ready. Arrangements must be made with the tramway operating staff to assist in every possible way.

C.M.D.S.—From the advanced dressing stations cases are conveyed by divisional motor and horse ambulances to the corps main dressing stations, where divisional responsibility ceases.

Walking Cases.—Special provision must be made for walking cases. They must on no account be allowed to enter the advanced dressing stations. Divisional collecting stations should be formed at convenient places not in the vicinity of an advanced dressing station. There walking cases should be fed, dressed if necessary, and sent on by returning empty transport, 60 c.m. railway and lorries, if available. The routes for walking cases should be well marked by notices, and by lights at night, showing the way to the corps collecting station.

Records.—All records will be kept at the corps main dressing stations and at the corps collecting stations. *Serum.*—Anti-tetanic serum will also only be administered at these stations.

Evacuation of sick and wounded.—

For this purpose the corps sector is divided into two sub-sectors—

1. South of Hill 63—from the River Lys to the Douve.
2. North of Hill 63—from the Douve to the North of sector.

Sub-sector 1.

Corps main dressing station ..	Pont d'Achelles	B.8.b.3.5. *
Advanced dressing stations ..	Brewery	C.1.d.4.5.
	Charing Cross	U.19.d.1.5.
	Underhill Farm	T.18.c.5.3.
Regimental aid posts	C.9.d.4.2.	
	C.3.c.8.3.	
	U.21.a.2.8.	
	U.14.d.8.7.	
	U.14.d.3.7.	
	U.14.a.6.8.	

Corps main dressing station will accommodate 600 stretcher cases.
Corps collecting station will accommodate 700 walking cases.

The personnel required for these stations will be six complete tent sub-divisions, which will be supplied by the divisions evacuating to these stations.

Sick.—The divisional rest station at L'Estrade will be used as a corps hospital for the sick of two divisions. One tent sub-division will be sufficient for this work.

Trivial wounds. Shell-shock.—The divisional rest station at Steenwerck will be used as a corps hospital for very slight wounds and " shell-shock " cases.

Walking cases.—Divisional collecting posts for these will be established at Touquet Berthe, U.26.a.2.1, and in the vicinity of Catacombs. These posts will be evacuated to the corps collecting station at Pont d'Achelles. B.8.b.3.5.

Sub-sector 2.

Corps main dressing station ..	T.19.b.4.5.	
Advanced dressing stations ..	Kandahar Farm	T.10.b.7.7.
	Lindenhoek Road	T.3.a.0.4.
Regimental aid posts	Spring Street	U.7.b.3.5.
	Fort Osborne	U.1.c.3.4.
	Boyle's Farm	U.1.a.4.0.
	Pont de St. Quentin	T.6.c.1.4.
	Shamus	N.35.d.6.0.

* These map references are as they appear in the orders. They indicate the exact position in the squared maps of the 1 in 40,000 scale.

Walking Cases.—Divisional collecting posts for these will be established at Leeuwerck Farm, T.10.d.4.2 and White House, T.10 central. These posts will be evacuated to the corps collecting station at T.19.b.4.5.

Corps main dressing station will accommodate 600 stretcher cases.

Corps collecting station will accommodate 700 walking cases.

The personnel required for these corps stations will be six complete tent sub-divisions, which will be supplied by the divisions evacuating to these stations.

Sick—The divisional rest station at S.16.c.3.2. will be used as a corps hospital for the sick of two divisions. One tent sub-division will be sufficient for the work.

Trivial wounds. Shell-shock.—The divisional rest station at Bailleul will be used as a corps hospital for very slight wounds and " shell-shock " cases. This and the similar station for the southern area, will each require one complete tent sub-division.

Reserve of ambulances.—A pool of ambulance cars from the division in reserve will be formed, and these will be available, on application from an A.D.M.S. to the D.D.M.S., to assist at any point where the casualties have been particularly heavy.

M.A.C.—The O.C., M.A.C., will be responsible for the evacuation of cases from the corps main dressing stations and the corps collecting stations to the casualty clearing stations at Trois Arbres and Bailleul, and to the various corps hospitals. In the case of slightly wounded men (walking cases), he will arrange to make full use of returning motor lorries and other transport. He will set apart a few cars for the conveyance of special cases (such as head and abdominal) to special operating centres.

Spare stretchers and blankets.—At each main dressing and collecting station a N.C.O. will be detailed to see that every ambulance, on unloading, is supplied with its full complement of stretchers and blankets. In addition to the usual supply of 150 stretchers and 400 blankets per ambulance a large number will be kept at the main dressing and collecting stations. It will be the duty of the O.C., M.A.C., to ensure that this supply is maintained.

The primary principles for successful evacuation are :—

Stretcher cases :—

1. Regimental aid posts prepared far forward, but not occupied till the troops are about to advance, to save stretcher bearers.
2. Route of evacuation to advanced dressing stations, which should be at the most advanced point to which ambulances can be brought, at right angles backward from the line of advance, to save field ambulance bearers.
3. Route of evacuation from advanced dressing stations to be the shortest possible road to main dressing stations to save divisional ambulance transport.
4. The formation of corps main dressing stations and corps collecting stations to save motor ambulance convoy cars.

Walking cases :—

1. Clearly marked routes to divisional collecting posts. These posts should not be near advanced dressing stations.
2. Collecting posts, where walking cases can be fed, dressed if necessary, and loaded on returning transport.

Note.—Returning empty railway stock will be available for the conveyance of wounded subject to the proviso that the stock is not deflected from its route.

A halt of five minutes can be arranged for the clearance of the wounded."

The A.D.M.S. of the 25th Division, whose line of advance was on the north of the Neuve Eglise–Messines road, had organized a scheme of collecting wounded by battalions, which departed from the normal system. In consequence of the narrowness of the front the battalions were to advance by " leap-frogging," that is, after one battalion had gone a certain distance, another fresh one was to pass through it and go on. Regimental medical officers at a conference with the A.D.M.S. agreed that the stretcher bearers of the battalion in front should carry back wounded to the headquarters of the battalion next behind and then return to their own aid post. The bearers of the battalion leap-frogging to the next position were then to carry back to the original British front line trench and so on in succession.

This arrangement meant a series of relay posts, worked by battalion, instead of by field ambulance stretcher bearers. It was said on the whole to work satisfactorily but it had some important defects. The bearers who went forward with their companies were not always available for relay work. Large numbers of wounded of different units came through some and not through others of the aid posts, so that the bearers and stretchers of the battalion carrying on the relays were in some cases too few to cope with the work. When the 4th Australian Division passed through in the afternoon of the 7th June, many of their wounded had also to be brought back by the battalion bearers of the 25th Division. It happened too, in one or two cases, that the battalion bearers carried wounded back to the advanced dressing station and were consequently a long time away from their battalions, so that when the relay in front arrived at the aid posts with wounded no bearers were for the time being at the aid post to carry them on to the next relay. German prisoners, however, were employed on their way to the rear to carry wounded on improvised stretchers made of duck boards and other material, and were thus of great assistance. Normally it is the bearer division of field ambulances that would establish a system of relays for bringing back wounded to an advanced dressing station from regimental aid posts, and on the whole the method adopted by the A.D.M.S. of the 25th Division, even in the circumstances of this attack, did not work as well as the normal method probably would have done.

The IXth Corps.—The IXth Corps, (D.D.M.S., Colonel J. B. Wilson), held the centre of the attack with the 16th, 19th and 36th Divisions and with the 11th Division in reserve. On the 9th June the 16th and 36th Divisions on the right and left of the attack were withdrawn from the line, and it was then held by

the 11th Division on the right and the 19th Division on the left, the front having then been contracted to 2,225 yards. The depth of the advance had been 4,500 yards.

The headquarters of the corps were at Mont Noir. Main dressing stations and walking wounded collecting stations were prepared for each of the three divisions, in this way differing from the other corps, which prepared corps main dressing stations. For the right division the main dressing station was at Dranoutre, with a walking wounded collecting station at Donegal Farm, about one mile farther east on the southern slopes of Mont Kemmel. The centre division had its main dressing station in a *hospice* at Locre, with its walking wounded collecting station in a field near the junction of the Kemmel–Westoutre and Kemmel–Locre fork roads, about 1,000 yards east of the main dressing station. The left division had its main dressing station at Westoutre, and its walking wounded collecting station at La Clytte. There was a corps rest station for the sick of the corps at a small farm, Keerseboom, about two miles north-east of Bailleul.

The main dressing stations were organized with accommodation for 425 at Dranoutre, 700 at Locre, and 420 at Westoutre, and the walking wounded collecting stations connected with them for 300, 400 and 400 respectively. The corps rest station had accommodation for 600 sick or lightly wounded, 200 beds being allotted for each of the 36th, 16th and 11th Divisions, while the 19th Division established a separate rest station for 150 beds at Westoutre.

The advanced dressing stations feeding these main dressing stations were at Lindenhoek for the right sector, at Kemmel Brewery for the middle sector, and at the Laiterie on the Kemmel–Vierstraat road for the left sector, with another farther north at Kleine Vierstraat.

The regimental aid posts were all situated in communication trenches and at or near trench tramways. These tramways were to be used as much as possible for evacuating to the advanced dressing stations, on the positions of which they converged.

The positions of collecting posts for walking wounded were selected so that the walking wounded could be directed away from the advanced dressing stations and thus avoid congestion at the latter. The general arrangements were made with the object of keeping the line of evacuation for serious cases, as far as possible, apart from the line of evacuation for the light cases. Consequently the walking wounded collecting stations were so

situated that they could be reached by cross-country tracks from the front. The tracks were marked with red cross guiding flags and box lanterns. From the collecting posts walking wounded were transferred by horse transport, buses and lorries, and full advantage was taken of returning supply and ammunition trains on the broad gauge and light railways, whenever they were available.

The divisional trench tramway officers took up their position in or near the advanced dressing stations, and were responsible that the trollies, which were fitted with gates for carrying stretchers and were drawn by mules, were supplied to the regimental aid posts as fast as the number of casualties required, and that breaches in the line, which were of frequent occurrence from artillery fire, were repaired as rapidly as possible.

Two officers and twenty other ranks were placed on duty at the Duke of York's siding on the railway line just east of Bailleul to receive the walking wounded cases from trains coming back from the front, and conduct them to No. 11 C.C.S. A similar party was posted at Wippenhoek Siding south of Remy Siding to receive and detrain any wounded arriving from La Clytte by railway, and conduct them either on foot or by ambulance transport to the casualty clearing stations at Remy Siding.

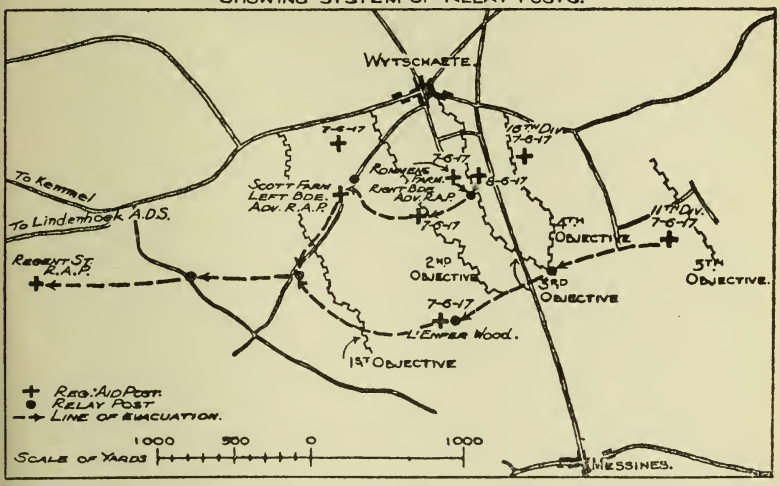
A convalescent camp for about 1,000 patients likely to be fit for duty within four or five days was established at Berthen, about halfway between Bailleul and Poperinghe.

All these posts were formed by field ambulances or sections of field ambulances of the divisions.

In order to assist the regimental stretcher bearers in collecting wounded, divisional commanders were instructed to provide, if possible, 100 extra bearers from each brigade. They were to be held in readiness at advanced brigade headquarters and supplied with stretchers sent up to the regimental aid posts. The field ambulance stretcher bearers were responsible for evacuating the wounded from the regimental aid posts, mainly by means of the trench tramways. The R.A.M.C. bearers had been trained for some months beforehand in the use of trollies with gate ends fitted on them so that each trolley could comfortably carry four lying down cases and their kits. This scheme worked admirably and wounded were brought back quickly and in good condition. German prisoners were also utilized as bearers and were of the greatest assistance. The system of bearer relay posts and the situation of regimental aid posts are

well illustrated in the following sketch map of the 36th Division medical situation during the battle.

-June- THE BATTLE OF MESSINES. -1917-
MAP OF MEDICAL SITUATION FRONT AREA 36TH DIVISION.
SHOWING SYSTEM OF RELAY POSTS.



The advanced dressing stations were large shell-proof dugouts or cellars at points where motor cars could be brought up.

The main dressing stations were in large Nissen hospital huts, marquees or buildings.

The motor ambulance convoy was worked on the continuous chain principle, that is to say, a car was sent to each main dressing station every six minutes during the acute phase of the attack. This system worked very successfully, and the convoy kept well in advance of the situation, evacuating 2,200 cases to the casualty clearing stations between 3 a.m. on the 7th June and noon on the 10th June.

Between La Clytte and Wippenhoek three special trains were employed for conveying the walking wounded from the former post, and in addition a lorry service was organized, a lorry being sent to each of the three walking wounded collecting posts two hours after the attack was launched and every half hour afterwards so long as the fighting continued. These lorries were fitted with bench seats and palliasse cushions, and had ladders with a hand rail for assisting the wounded to get into them.

Colonel Bowen, the A.D.M.S. of the 16th Division, was seriously wounded in the chest by a shell fragment on the 8th

June while visiting the regimental aid posts, but fortunately recovered and returned to France in February 1918.

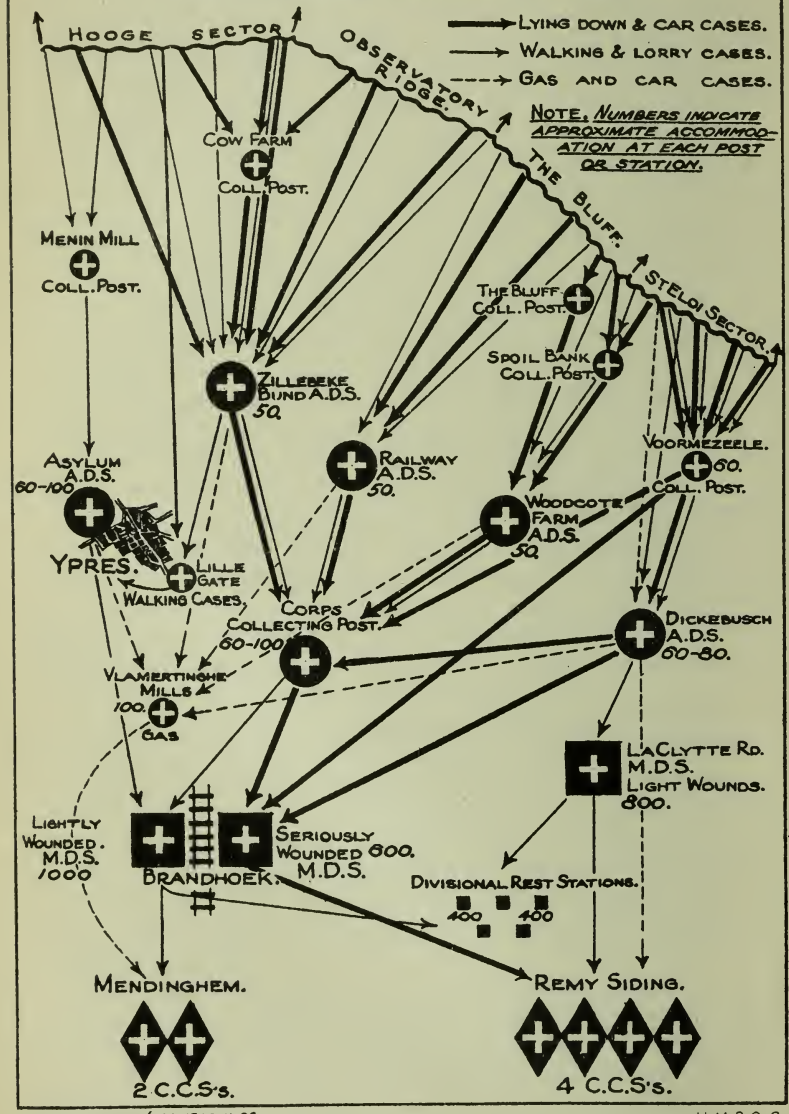
The Xth Corps.—The Xth Corps held the sector on the left flank of the attack south-west and north-east of the Yser Canal from the Diependaal Beek to Observatory Ridge. It had the IInd Corps on its left in the short sector between the Ypres-Menin road and Observatory Ridge. Its divisions were the 41st, 47th and 23rd, with the 14th in reserve. The D.D.M.S., Colonel R. L. R. Macleod, had his headquarters somewhat far back at Abeele on the Belgian frontier.

The front area, including the IInd Corps sector, before it was handed over to the Fifth Army, consisted of four sectors; from right to left, the St. Eloi sector, the Bluff sector, Observatory Ridge sector, and the Hooge sector. A series of collecting posts was prepared behind each of these sectors at Voormezeele, Spoilbank, the Bluff, Cow Farm and Menin Mill, with a series of advanced dressing stations farther back at Dickebusch, Woodcote Farm, the railway embankment, the Zillebeke Bund, and the asylum at Ypres. Farther back there was one large corps collecting post on the Ypres-Dickebusch road, south-west of Kruisstraat, to which both lying down cases and walking cases were brought, and from there sent to a main dressing station with accommodation for 600 seriously wounded, and another for 1,000 lightly wounded at Brandhoek, the former being in a school south of the railway, and the latter in tents on the north side. There was also a main dressing station for 800 lightly wounded on La Clytte road half-way between La Clytte and Reninghelst. There was a divisional rest station for each division with accommodation for 400.

A special feature in the arrangements of the Xth Corps was the preparation of a collecting post at Vlamertinghe Mill for the reception of casualties from gas poisoning. The month of June was considered by the gas experts as a specially favourable month for attacks by lung irritant gases, and this fact had been brought to the notice of the corps and divisional D.Ds.M.S. and A.Ds.M.S., but the Xth Corps appears to be the only corps which made separate arrangements for collecting and evacuating the gas casualties.

The lightly wounded from other sectors than the St. Eloi sector, which cleared to La Clytte, were brought to Brandhoek, either through the corps collecting post or by way of a post at the Lille Gate of Ypres, or through Ypres and by way of the advanced dressing station at the asylum. The seriously wounded went to the main dressing station at Brandhoek, either direct or through the corps collecting posts.

DIAGRAM SHOWING X CORPS SCHEME OF EVACUATION FOR CASUALTIES IN PREPARATION FOR THE BATTLE OF MESSINES: JUNE 1917.



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The general scheme is shown on the diagram, which was prepared by the D.D.M.S. of the Corps in May; but as the IInd Corps took over the Hooge sector before the attack of the 7th June, these arrangements were modified to some extent.

The walking wounded cases were evacuated at first to the casualty clearing stations at Remy Siding, but this was altered, and the lightly wounded from Brandhoek were subsequently cleared to the casualty clearing stations at Mendinghem. Some of the lightly wounded, however, from the dressing station on the La Clytte road went direct to the divisional rest stations.

The lightly wounded were brought back from the advanced dressing stations by horsed ambulance wagons, empty supply lorries or general service wagons to the dressing station at Brandhoek, and the seriously wounded by a motor ambulance convoy improvised by the D.D.M.S. out of the ambulance cars of the divisional field ambulances. It assembled on the road between Kruisstraat and Vlamertinghe. From the collecting posts and advanced dressing stations wounded were taken to the corps collecting station or to the advanced dressing station at Dickebusch by hand carriage or trench tramways. Motor lorries were employed for conveying lightly wounded from Brandhoek to the casualty clearing stations. Arrangements were also made for ambulance trains or temporary ambulance trains being run as far as Brandhoek to clear both the dressing stations there to the lines of communication or bases direct, if necessary. This is well illustrated in the diagram of the scheme of evacuation in the 23rd Division.

But practically all the regimental aid posts, collecting posts, and advanced dressing stations were situated at or near trench tramways, and, as far as possible, the wounded were brought back on these by field ambulance bearers. The chief difficulty experienced in this method of evacuation was the frequent damage to the lines by artillery fire.

In addition to the trench tramways, a light railway ran from the front areas to a point known as Wellington Junction, situated about one and a half miles south of Brandhoek. From there a light railway ran to join the main line west of Brandhoek Siding. Wounded, who might arrive by the light railway at Wellington Junction, were received there by a field ambulance detachment and sent to Brandhoek by a shuttle service of trains. There was another light railway running from Zevecoten, near Reninghelst, to Wippenhoek, where a divisional

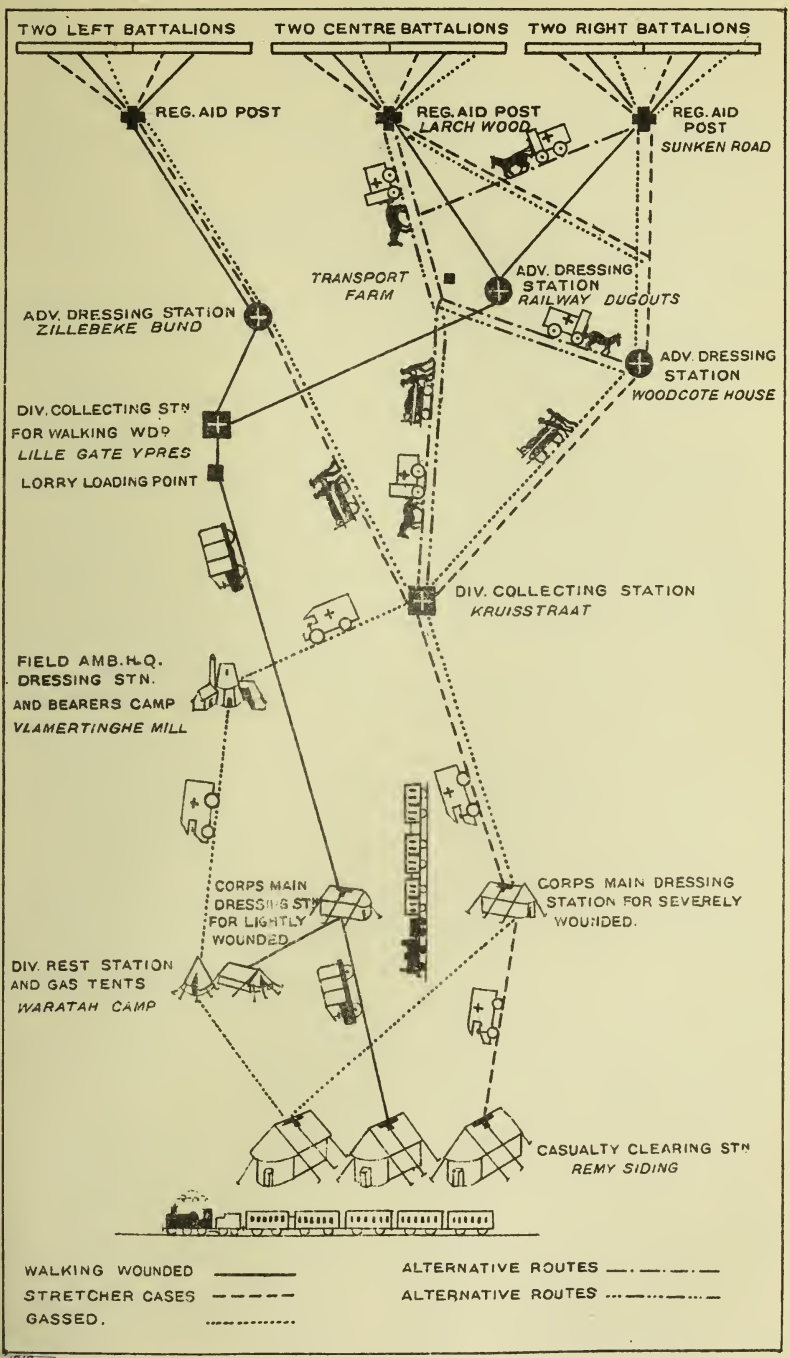
rest station of the 41st Division was established. It was used, when necessary, to bring lightly wounded from the walking wounded collecting station on the La Clytte–Reninghelst road by empty supply trucks direct to the rest station.

Evacuation of the Wounded.

Owing to the rapidity with which the wounded were coming into Bailleul, the casualty clearing stations there in the early morning of the 8th June became somewhat congested. This was specially felt at No. 53 C.C.S. in the asylum in the northern outskirts of Bailleul. Patients were then diverted from the southern sector of the IXth Corps to Remy Siding in order to relieve this congestion, No. 53 C.C.S. being closed for the reception of wounded for six hours. Lying-down patients were also diverted then to No. 11 C.C.S. in rotation with the other casualty clearing stations in Bailleul in place of No. 53. The congestion in Bailleul was further relieved by transferring patients by road to Hazebrouck, and by sending up a convoy of fifty cars from St. Omer, to transfer 400 patients to the hospitals in the St. Omer area.

Much congestion was also experienced at Remy Siding in No. 3 Canadian C.C.S. by the number of lightly wounded patients arriving there. The arrangement by which casualty clearing stations were allotted for walking wounded only, did not, in fact, prove satisfactory. The orders on the subject were consequently cancelled during the battle, and all the casualty clearing stations at Remy Siding then received lying down cases in rotation, as in the case of No. 11 C.C.S. and those in Bailleul.

The New Zealand Stationary Hospital had been transferred to Hazebrouck from Amiens on the 25th May as a special hospital for gunshot wounds of the head. The distinguished American surgeon, Major Harvey Cushing, who belonged to the staff of No. 11 (Harvard) General Hospital, was attached to it as operating surgeon during the battle. Owing to the large number of head cases requiring operation, which had accumulated at the New Zealand Stationary Hospital, fifty of them were transferred to No. 7 General Hospital, St. Omer, by road.



Scheme of Evacuation of Wounded from the 23rd Division during the Battle of Messines.

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The Casualties.

The number of wounded admitted to the medical units of the three Corps during the first three days of the battle was as follows :—

	IInd Anzac Corps.	IXth Corps.	Xth Corps.	Total.
7th June	4,414	2,368	1,963	8,745
8th June	3,103	898	2,097	6,098
9th June	1,350	339	1,027	2,716
Totals ..	8,867	3,605	5,087	17,559

The wounds were on the whole very severe, and were mainly caused by high explosive shells and shrapnel. Only about 5 per cent. were attributed to rifle or machine gun bullets.

The number of gassed patients during the battle was considerable. Most were in the IInd Anzac Corps area and went to No. 2 Australian C.C.S. Some battalions which advanced, before the creeping barrage had lifted, sustained casualties from the fire of the British guns.

The casualties amongst the personnel of the medical services were :—

Officers	Killed ..	4
	Wounded ..	6
Other ranks	Killed ..	24
	Wounded ..	130

Some records were kept in one or more divisions of all three corps to show the proportion of stretcher cases to walking cases collected by their field ambulances. The results are shown in the following table :—

Division.	Period.	Total collected.			Percentage of total.		
		Walking.	Sitting.	Lying.	Walking.	Sitting.	Lying.
N.Z.	3 a.m. 7th June to 9 a.m. 9th June	980	1,620	1,232	26	32	42
25th	3 a.m. 7th June to Noon 9th June	2,879	1,767		61·9	38·1	
19th	7th and 8th June	1,037	459		69·3	30·7	
41st & 23rd		2,912	1,262		69·8	30·2	

An average of all these figures shows the percentage of walking cases to be 64·2 and of the lying cases 35·8 of the total, or approximately two walking cases to one stretcher case.

The records, however, are not altogether satisfactory as a means of comparison, for the extent to which sitting cases were regarded as stretcher cases or as walking cases is not clear.

The Weather.

The weather was hot and on some days sultry, with heavy thunder showers on the evening of the 7th and 12th June, otherwise it was fine and generally the best possible weather for the work of collecting the wounded, whose comfort and treatment were thus in no way affected by unfavourable weather conditions.

CHAPTER VIII.

THE BATTLES OF YPRES, 1917.

THE battles of Ypres in 1917 resembled in many respects the battles of the Somme in 1916; that is to say, they constituted a series of attacks, by a succession of divisions, over an extensive area of shell-devastated country with the object of driving the enemy from dominating positions on high ground. The operations were interrupted by heavy and continuous rains, and it was impossible to take full advantage of initial successes. The ground over which the troops fought became in many places "a succession of vast muddy pools. The valleys of the choked and overflowing streams were speedily transformed into long stretches of bog, impassable except by a few well-defined tracks which became marks for the enemy's artillery."* Successive attacks were consequently delayed until spells of fine weather, which were by no means frequent or prolonged, dried the ground sufficiently for the operations to be continued.

The battles extended over the period 31st July to 10th November. After the opening battle on the 31st July, rain fell incessantly and operations were delayed until the 16th August, when they were again, on the 19th August, interrupted by weather conditions till the 20th September.

Outline of the Operations.

The attacks were successively directed against the Pilckem Ridge (31st July to 2nd August), Langemarck (16th to 18th August), Menin Road Ridge (20th to 25th September), Polygon Wood (26th September to 3rd October), Broodseinde (4th October), Poelcappelle (9th October), and Passchendaele in two attacks on the 12th October and between the 26th October and 10th November.

In the *Battle of Pilckem Ridge* the IInd (24th, 30th and 8th Divisions), XIXth (15th and 55th Divisions), XVIIIth (39th and 51st Divisions), and XIVth Corps (38th and Guards Divisions), all in the Fifth Army, with the 41st Division of the Xth Corps, Second Army, supporting the right of the attack,

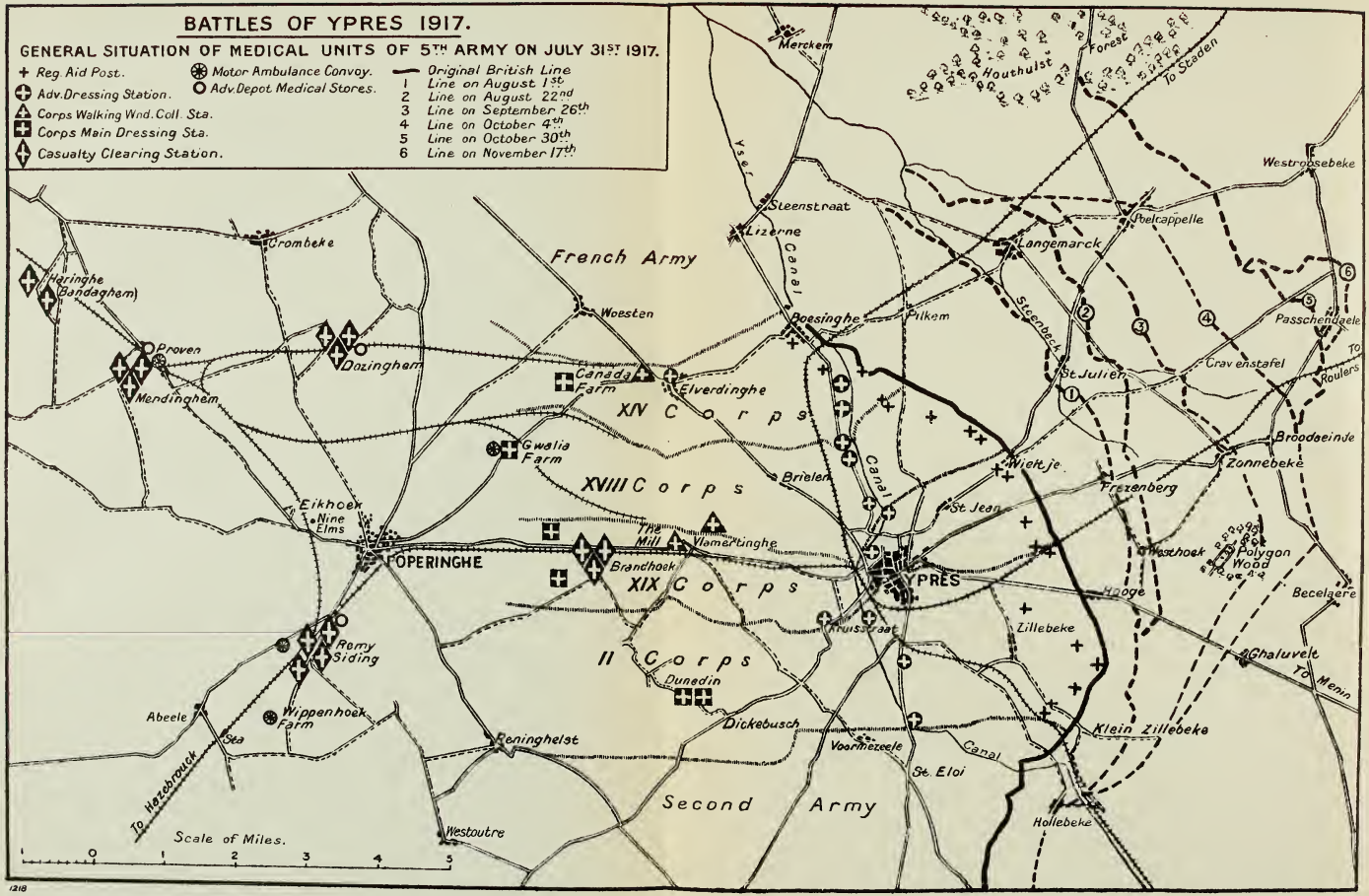
* Sir Douglas Haig's despatches, p. 116.

were engaged from in front of Klein Zillebeke to Boesinghe, and French divisions extended the attack on the left between Boesinghe and Steenstraat. An advance of approximately two miles in depth was made, reaching the enemy positions from Westhoek to St. Julien and along the line of the Steenbeek beyond the Pilckem Ridge.

In the *Battle of Langemarck*, on the 16th to 18th August, the divisions chiefly engaged were the 56th and 8th in the IInd Corps, the 48th and 11th in the XIXth Corps, and the 29th and 20th in the XIVth Corps. The line was then advanced to Langemarck, but was little changed in other sectors.

After this wet weather continued. For the subsequent battles, which were fought in order to capture the Menin Road Ridge between Gheluvelt and Broodseinde, the Second Army front was extended northwards and the operations were conducted by it north and south of the Menin Road in conjunction with attacks by the Fifth Army further north. The Ist Anzac Corps had been transferred to the Second Army from the Third Army at the end of July, with the 1st, 2nd and 5th Australian Divisions, to which the 4th and 3rd Australian Divisions were added in August and October. The 25th and 47th Divisions were also in the Ist Anzac Corps for a short time in August. The VIIIth Corps, which had been a reserve corps of the Fifth Army, was restored to the Second Army at the beginning of September. The Canadian Corps, composed of the four Canadian Divisions, was transferred from the First to the Second Army in October ; so that during the battle on the Menin Road Ridge and subsequent battles the Second Army had at its disposal three corps in addition to those (IInd Anzac, IXth and Xth Corps) with which it had fought the battle of Messines.

In the *Battle of Menin Road Ridge* on the 20th September the Xth Corps, with the 19th, 39th, 41st and 23rd Divisions, was engaged south of the Menin Road, and the Ist Anzac Corps, with the 1st and 2nd Australian Divisions, north of the road. The Fifth Army, further north, attacked along the Ypres-Roulers railway at the same time with the 9th and 55th Divisions of the Vth Corps, which had previously been in reserve, and on their left north of the Zonnebeke-Langemarck road with the 58th and 51st Divisions of the XVIIIth Corps. The line was advanced to Polygon Wood and north of Langemarck. The fighting was continued on the 26th September, chiefly by Ist Anzac Corps divisions (5th and 4th Australian) and Vth Corps divisions (3rd and 59th), with the 39th and 33rd



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Divisions of the Xth Corps on their right flank astride the Menin Road and the 58th Division of the XVIIIth Corps on the left flank south-east of St. Julien.

The *Battle of Polygon Wood* was a series of heavy counter-attacks which were continued into October.

The *Battle of Broodseinde* was fought on the 4th October, when the Second and Fifth Armies renewed the attack, directing it against the main line of the ridge east of Zonnebeke from the Menin Road to the Ypres-Staden railway over a front of seven miles. Twelve divisions were engaged. The 37th of the IXth Corps south of the Menin Road, the 5th, 21st and 7th of the Xth Corps between it and Polygon Wood, the 1st and 2nd Australian of the Ist Anzac Corps between Polygon Wood and the Ypres-Roulers railway, the 3rd Australian and New Zealand of the IInd Anzac Corps, which had been brought up from the right of the Second Army to its left flank, between the Ypres-Roulers railway and the Ypres-Gravenstafel road, the 48th, 11th and 4th of the XVIIIth Corps on the right of the IInd Anzac Corps to Langemarck, and the 29th of the XIVth Corps astride the Ypres-Staden railway. The result of the battle was a great advance, and the British line was now established along the main ridge from the west of Gheluvelt through Broodseinde to the Ypres-Roulers railway, where it bent north-west to Poelcappelle and the Ypres-Staden railway, an advance of some 6,000 yards in greatest depth from the line held before the attack of the 31st July.

Bad weather again continued, but notwithstanding the unfavourable conditions and the state of the ground the attack was renewed on the 9th October, when the *Battle of Poelcappelle* was fought in conjunction with the French First Army under General Anthoine from the east of Zonnebeke to near Merckhem. The Guards Division and the French on the left of the attack advanced across a flooded valley, a distance of nearly one and a half miles, to the Houthulst Forest. The 29th and 4th Divisions of the same Corps (XIVth) advanced along the Ypres-Staden railway to east of the Poelcappelle-Houthulst road; while the 11th and 48th Divisions of the XVIIIth and the 66th and 49th of the IInd Anzac Corps extended the attack from the east of Poelcappelle to Broodseinde, making some slight progress.

On the 12th October the *First Battle of Passchendaele* took place. The attack was renewed between the Ypres-Roulers railway and Houthulst Forest by the Ist and IInd Anzac Corps and the XIVth Corps, but the constant rain prevented

the operations being continued. They were renewed again on the 26th October in the *Second Battle of Passchendaele*, when the 3rd and 4th Canadian Divisions of the Canadian Corps made an attack up the valley of the Ravebeek and secured high ground south of Passchendaele. The advance was continued on the 30th October between the Ypres-Roulers railway and Poelcappelle-Westroosebeke road by the 3rd and 4th Canadian Divisions and the 58th and 63rd Divisions of the XVIIIth Corps on their left; and again by the 1st and 2nd Canadian Divisions on the 6th November, when the village of Passchendaele was captured. Some further progress northwards from Passchendaele was made on the 10th November.

The operations in Flanders then came to an end,* and a readjustment of army areas again took place, the Fifth Army being transferred to the area south of the Somme, and the Second Army headquarters to Italy, its place being taken by the Fourth Army headquarters, as already noted.

Had the weather conditions permitted of a complete occupation of the Passchendaele ridge and the country beyond before winter set in, the operations of the Second and Fifth Armies were intended to be combined with operations of the Fourth Army on the coast; but when further progress at Passchendaele ceased in November there was no longer any need for maintaining a British front in the Dunkirk-Nieuport area. The Dunkirk-Nieuport area was consequently re-transferred to French troops at the close of the operations in Flanders.

The progress made during the various attacks is shown on the map.

General Medical Preparations for the Battles.

The preparations made for the offensives, more especially those for which the D.M.S. of the Fifth Army was responsible, were based upon an anticipation of the complete success of the operations.

The D.G.M.S. held a conference of Ds.M.S. of armies on the 29th May 1917, when the requirements of the Fifth Army in its new area were considered. These necessitated the transfer of various medical units from other armies, in order to build up a medical strategical position in preparation for the part the army was to play after the Messines ridge had been captured

* Although the operations described as the Battles of Ypres, 1917, came to an end on 10th November, raids and minor actions were continued on the Ypres front, especially in the vicinity of Poelcappelle, by the 1st Division which had arrived from the Dunkirk area.

by the Second Army. Consequently by the 21st July the Fifth Army had been well supplied with medical units of all descriptions, apart from the medical units of the divisions of which it was composed. Its D.M.S., Surg.-General B. M. Skinner, had then under his control the following units :—

Casualty Clearing Stations—	
At Dozinghem	Nos. 4, 47 and 61.
At Brandhoek	Nos. 32, 44 and No. 3 Australian.
Remy Siding	Nos. 10, 17, Nos. 2 and 3 Canadian.
Mendinghem	Nos. 12, 46 and 64.
Bandaghem	Nos. 62 and 63.
Advanced Depôts of Medical Stores—	
Dozinghem	No. 18.
Proven	No. 31.
Remy Siding	No. 2 Canadian.
Mobile Laboratories—	
Remy Siding	No. 1 Bacteriological.
Dozinghem	No. 8 Bacteriological.
Mendinghem	No. 11 Bacteriological.
Poperinghe	No. 23 Hygiene.
X-ray Units—	
Remy Siding	No. 5.
Dozinghem	No. 7.
Motor Ambulance Convoys—	
Proven	No. 4 with the XIVth Corps.
Wippenhoek Farm ..	No. 6 with the XIXth Corps.
Remy Siding (near) ..	No. 20 with the IInd Corps.
Poperinghe (near) at Château, Lovie Road.	No. 24 with the XVIIIth Corps.
Winnezelle, between Steenvoorde and Herzeele.	No. 31 as Army Reserve.

The Fifth Army area had also ten sanitary sections distributed in it.*

Surg.-General Skinner had asked for fifteen casualty clearing stations, and a large number of hospital marquees and huts for them. Approximately 1,300 marquees and 60 huts were given to him for sick and wounded alone, irrespective

* Four more sanitary sections were asked for from the D.G.M.S. by the D.M.S. of the Fifth Army to arrive on the 13th August, in consequence of the new area that had been taken over from the enemy.

of those required for personnel and other purposes. Each marquee could take 10 wounded and each hut 20, so that 14,200 wounded could be accommodated comfortably at one time; while at least 25 per cent. could be added to these numbers in emergency without inconvenience, bringing the total accommodation up to 18,000. By crisis expansion it was estimated that shelter could be provided in these casualty clearing stations for 20,000 at one time.

But the D.M.S. of the Fifth Army, not content with this ample provision, applied for an increase in the number of marquees on the 13th August, and the responsibility of granting or refusing these was placed on the D.D.G.M.S. by the Adjutant-General, who asked him if he was satisfied that the total tentage already given would meet all the requirements for the number of wounded likely to arise in any impending operations. The D.D.G.M.S. considered that they were adequate for reasonable requirements, with proper distribution and with the existing means of evacuation. An additional casualty clearing station, No. 13 from Tincourt, however, was sent to the Fifth Army, but was kept parked. The intention of the D.M.S. was to keep it in reserve in anticipation of an extensive advance, and sites were being prepared for it and others at Elverdinghe. It went, however, to Arneke eventually at the end of September, owing to the need of a casualty clearing station in a back area for the sick of the reinforcements which were being brought up from the base depôts.

On the 21st July the D.G.M.S. issued instructions for the coming offensive operations. Ds.M.S. of armies not actively engaged were to retain as many sick and wounded as possible in the casualty clearing stations and stationary hospitals in their areas, so as to avoid using ambulance trains and filling the accommodation in base hospitals. At St. Omer there were three general hospitals open, No. 7 at Malassises, No. 58 at the Champs de Mars, and No. 59 in the military hospital, St. Omer, for surgical cases, and at Moule Château, some five miles distant on the Calais road, for minor cases. There were also two stationary hospitals, No. 4 and No. 7 (Canadian), at Arques, and another stationary hospital, No. 4 (Canadian), was opening at the Château at Longnesse, near St. Omer. These hospitals were to receive sick from the back area of the Fifth Army, as well as sick and wounded arriving by road or barge from the Fourth Army in the Dunkirk area, or, in emergency, from the casualty clearing stations of the Fifth Army.

The distribution of sick and wounded to the casualty clearing stations and St. Omer was regulated by the following instructions, issued by the D.M.S. of the Fifth Army on the 24th July :—

"On and after 9 a.m. on the 26th inst. the following groups of casualty clearing stations are allotted for the reception of sick and wounded from the areas detailed in the table.

Attention is directed to the disposal of special cases.

Note.—*Forward Area* is taken as E. of line Crombeke-Poperinghe-Abeele Station.

Back Area is W. of above line, and E. of line Bergues-Noordpeene Railway.

Casualty clearing stations.	Area.
Remy Siding—	
Nos. 10, 17, 2 and 3 Canadian.	*IInd Corps.*—All sick and wounded. *XIXth Corps.*—All wounded and sick from Forward Area.
Proven (Mendinghem)—	
Nos. 12, 46 and 64.	*Lachrymatory Gas* cases from all corps. *Head Injuries* from all corps. *XIXth Corps.*—All sick from Back Area. *XVIIIth Corps.*—Walking wounded when carried by vehicles other than motor ambulance cars. All lying sick from Forward Area. *XIVth Corps.*—Walking wounded when carried by vehicles other than motor ambulance cars.
Dozinghem—	
Nos. 4, 47 and 61.	*XIVth* and *XVIIIth Corps.*—All wounded using ambulance cars.
No. 4.	*XIVth Corps* lying sick from Forward Area.
No. 61.	*Self-inflicted and Infectious.* Also Eye Centre.
No. 47.	Doubtful cases of N.Y.D. Gassed.
Brandhoek. *On Zero*—	
No. 32.	All abdominal cases from IInd, XIXth and XVIIIth Corps.
On Zero + 2—	
Nos. 32, 44 and 3 Australian.	All abdominal, severe chest injuries, and compound fractures of thigh from IInd, XIXth and XVIIIth Corps.
Haringhe (Bandaghem)—	
No. 63.	*XIVth and XVIIIth Corps.*—All sick in Back Area and sitting sick from Forward Area.
No. 62.	*VIIIth Corps.*—All sick in Back Area. *All N.Y.D.N. cases.*

All sick W. of line Bergues-Noordpeene Railway will be sent to St. Omer or Arques, except self-inflicted wounded, which will be sent to No. 61 Casualty Clearing Station."

A motor ambulance convoy was allotted to each corps holding a sector of the front :—

No. 20 to the IInd Corps.
No. 6 to the XIXth Corps.
No. 24 to the XVIIIth Corps.
No. 4 to the XIVth Corps.

No. 31 M.A.C. was in army reserve directly under the D.M.S.

A programme for ambulance trains was drawn up based on the anticipated occurrence of 20,000 wounded on the first day of the attack, and of diminished numbers on subsequent days. There were consequently garaged on the night preceding the attack 6 ambulance trains and 2 temporary ambulance trains at Hazebrouck and St. Omer ; 2 ambulance trains at Dozinghem and 2 at Bandaghem, 1 ambulance train and 1 temporary ambulance train at Mendinghem, and 1 temporary ambulance train at Remy Siding. It was calculated that 5 ambulance trains and 3 temporary ambulance trains would come up to Remy Siding during the first twenty-four hours, 4 ambulance trains and 3 temporary ambulance trains to Mendinghem, and 4 ambulance trains to Dozinghem, capable of evacuating 12,000. On the second day trains were to run to evacuate 11,000, on the third day 7,000, and on the fourth day 5,000 ; each train after loading being immediately replaced by another from the garage.

The Medical Services of Corps and Divisions in the Opening Phases of the Battles.

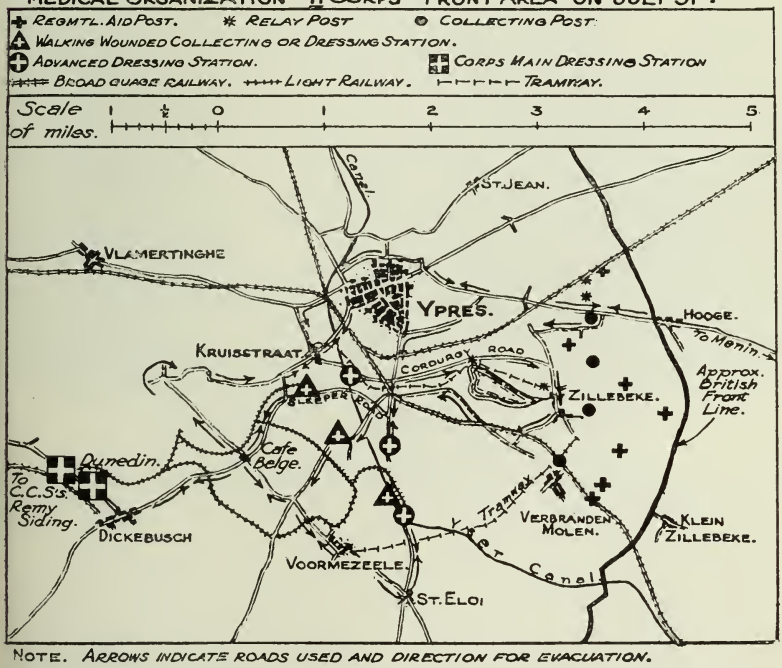
The collection of wounded from the battlefield and their removal to collecting posts and advanced dressing stations was controlled by the A.Ds.M.S. of the divisions engaged. Most of the advanced dressing stations were along or in the vicinity of the Yser canal banks. The work of the regimental medical officers and stretcher bearers and of the field ambulance bearer divisions was immensely handicapped by the mud and marsh over which they had to collect and bring back the wounded. Trench tramways and light railways were frequently broken, and their extension, as the line advanced, was limited by the state of the ground. It was consequently only in comparatively short sections that they were able to relieve the bearers of hand carriage. Horsed ambulance wagons and motor ambulance cars were also restricted in their use in advance of the canal bank. Only a few roads were fit for wheeled traffic, such as the Menin, Zonnebeke and St. Julien

roads, and even these for short distances only. Consequently most of the work of bringing wounded back had to be by relays of bearers.

The general situation of the divisional and corps medical posts at the beginning of the operations is shown on the map.

Each corps organized its own medical posts, the D.D.M.S. of the corps being made responsible for the evacuation of wounded from the advanced and main dressing stations to the casualty clearing stations in accordance with the distribution in the instructions quoted above.

IInd Corps.—The organization of posts and scheme of evacuation prepared by the IInd Corps D.D.M.S., Colonel Guise Moores, is shown in the following map.



NOTE. ARROWS INDICATE ROADS USED AND DIRECTION FOR EVACUATION.

Two corps main dressing stations, one for seriously wounded and the other for walking wounded, were established near Dickebusch at a place to which the name of Dunedin was given. The former was manned by a tent division from a field ambulance of the 30th Division and by six tent subdivisions from field ambulances of the 24th, 25th and 18th

Divisions ; the latter by a tent division from the 8th Division and two tent sub-divisions from the 24th Division. A centre for dealing with gassed cases was formed in special marquees at the dressing station for severely wounded.

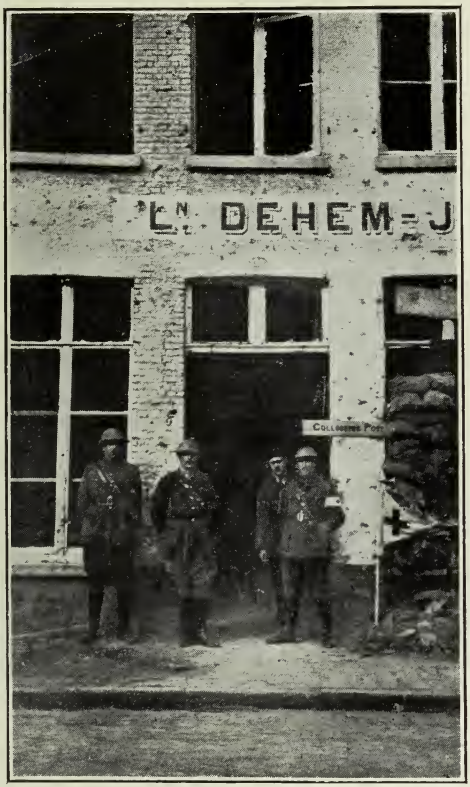
In addition to the motor ambulance convoy allotted to the corps, the D.D.M.S. pooled the ambulance cars of the divisional field ambulances, with the exception of their Ford cars, and formed another corps convoy for clearing the advanced dressing stations to the main dressing stations. Twenty lorries were attached to it for clearing the walking wounded from the collecting posts to Dunedin. This convoy was assembled at

The Prison, Ypres, used as a main dressing station.

the Café Belge, as shown on the map. The collecting post on the Menin road was unfortunately damaged by fire during preparations for the battle and 500 stretchers were destroyed.

The XIXth Corps.—The XIXth Corps D.D.M.S., Colonel O. R. A. Julian, established two corps main dressing stations at Brandhoek and at the Red Farm, some 1,000 yards further back, with a corps walking wounded dressing station at Vlamertinghe Mill. Regimental aid posts had been specially constructed, two for the right division on Cambridge road, between the Ypres-Roulers railway and the Zonnebeke road, and two for the left division on Oxford road, between the Zonnebeke and St. Julien roads. The advanced dressing stations to which the casualties were brought from them were

at the Ypres prison, or, as an alternative, at Kruisstraat in the event of the former being shelled ; and on the canal bank north of Ypres. There was a light railway from St. Jean to the Red Farm, and wounded could be sent back by it to the corps main dressing station at the latter place.



Collecting post close to Lille Gate, Ypres.

It was doubtful whether the collecting post on the Menin road could be cleared through Ypres, but a new road had been formed around Ypres to Kruisstraat, and it was arranged that if the cars could not pass through Ypres, stretcher cases should be taken by wheeled stretchers over this road to Kruisstraat and thence by car to the corps main dressing station.

For use on the light railway running to the Red Farm 50 sets of stretcher frames had been made and adapted for fitting on the trucks. Each truck could thus carry 8 lying and 4 sitting

cases, or 16 sitting cases. There were ten of these trucks to each train, which was calculated to make four journeys in twenty-four hours. A nursing orderly was appointed to each of the trains. Less severely wounded could also be sent back on any of the supply trucks returning empty along this line.

A light railway was also available for walking wounded from Kruisstraat to Vlamertinghe Mill, and arrangements were made to send back wounded on the broad-gauge line between Vlamertinghe and Remy Siding to the casualty clearing stations at the latter place. For this purpose trains were improvised by ten large trucks running every two to four hours, each truck

Potijze Road, Ypres Salient.

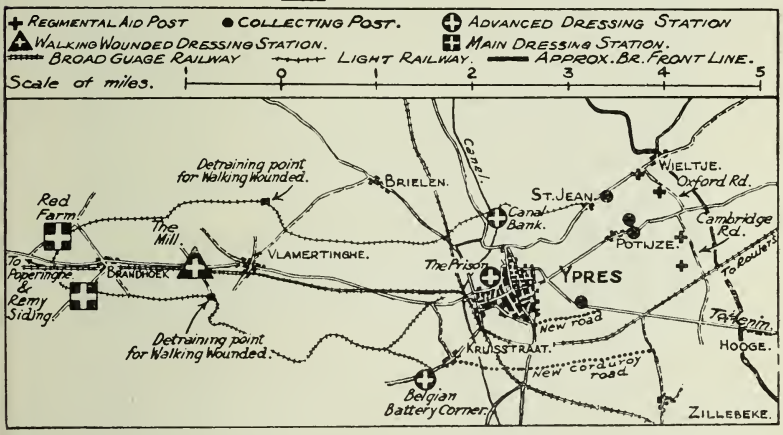
accommodating thirty sitting cases. These train services were intended to be supplementary to the bus and lorry service, so as to avoid any accumulation of wounded at the dressing stations pending the arrival of the cars.

The motor transport of the field ambulances remained under the orders of the A.Ds.M.S. of divisions, and was not pooled, as in some other divisions, to form a corps motor ambulance convoy. Fifteen charabancs had been placed at the disposal of the corps by the Fifth Army, and in addition ten lorries were added from the corps itself. They were used for clearing the corps walking wounded dressing station to the casualty clearing stations and to the corps rest station. Supply lorries were

running as far as Potijze, and the empty returning lorries could be used for bringing the less severely wounded to Vlamertinghe Mill.

The medical situation in the XIXth Corps is shown on the following map.

BATTLES OF YPRES 1917.
MEDICAL SITUATION XIX CORPS FRONT AREA ON JULY 31ST



The XVIIIth Corps.—The XVIIIth Corps (D.D.M.S., Colonel E. G. Browne) had similar arrangements. The regimental aid posts were grouped. The divisions in both sectors had two grouped aid posts each, as shown on the map, with two advanced dressing stations—one on the canal bank at Duhallow, opposite Noordhofwijk, and the other at Essex Farm, just north of the Brielen-St. Julien road.

A corps main dressing station for seriously wounded was established at Gwalia Farm, half-way between Poperinghe and Elverdinghe ; and for walking wounded near Vlamertinghe on the Vlamertinghe-Elverdinghe road. There were also a corps collecting station for sick and an officers' rest station at Poperinghe, a corps scabies centre at Eikhoek, east of the Poperinghe-Proven road, and a corps rest station in the back area at Herzeele on the road from Poperinghe to Wormhoudt.

A complete tent division of a field ambulance was allotted to the advanced dressing station and divisional collecting post of each division, and the bearer divisions of all three field ambulances of each division were employed under orders of the divisional A.D.M.S. for collecting and evacuating the casualties.

The accommodation at the corps main dressing station for the seriously wounded was sufficient for 1,000. It was divided into two sections, each manned by a tent division of a field

Corps main dressing station at Gwalia Farm. Ypres Front 1917.

ambulance from each of the two attacking divisions. It was intended in this way to deal with the wounded of each division separately by one of its own field ambulances.

Barn used as reception room in a corps main dressing station at Gwalia Farm, Ypres Front.

Similarly the corps walking wounded dressing station was manned by two tent sub-divisions, one from each of the two assaulting divisions.

The corps sick collecting station and the corps scabies depôt were each manned by a tent sub-division from one of the attacking divisions.

The corps rest station at Herzeele was sufficient to accommodate 700 patients, and was capable of expansion to 800. It was manned by two tent sub-divisions—one from each of the two divisions in reserve.

The disposition of the field ambulances of the XVIIIth Corps divisions on the night of the 30th/31st July was consequently as follows, and is instructive as exemplifying the use of field ambulances as then organized :—

39*th Division.*—Three bearer divisions under orders of the A.D.M.S. for bringing wounded to the canal bank. One tent division manning the divisional collecting post and advanced dressing station. One tent sub-division at the corps walking wounded collecting station. One tent division on duty at the corps main dressing station, and two tent sub-divisions packed and parked, ready to move if necessary, at the corps main dressing station.

51*st Division.*—Three bearer divisions under orders of the A.D.M.S. One tent division for the divisional collecting post and advanced dressing station. One tent sub-division at the corps walking wounded collecting station. One tent division at the corps main dressing station, and two tent sub-divisions at the corps sick collecting station and corps officers' rest station.

11*th Division.*—In reserve. One field ambulance parked at the corps main dressing station. One field ambulance parked off the Poperinghe-Elverdinghe road about one and a half miles north-west of Poperinghe. One field ambulance, less a tent sub-division, parked about the same distance north of Poperinghe on the Poperinghe-Proven road, and one tent sub-division at the corps rest station.

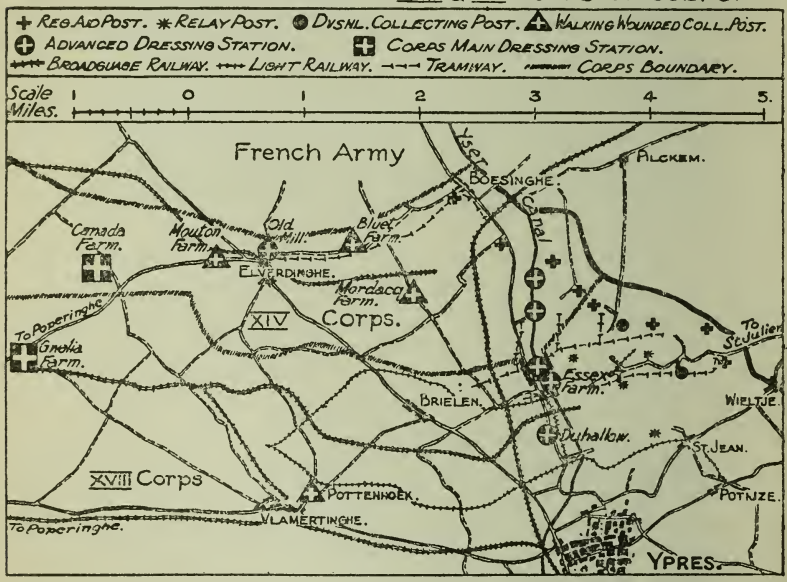
48*th Division.*—Field ambulances parked as in the case of the 11th Division, less one tent sub-division at the corps rest station.

The whole of the work of collecting and evacuating east of the canal bank was under the direction of the divisional A.Ds.M.S., but from the canal bank backwards the corps D.D.M.S. took over the control of evacuation.

The A.Ds.M.S. of divisions were responsible for flagging their sectors to show the direction in which the various posts lay. Each division was allotted 20 wheeled stretcher carriers, 6 horsed ambulance wagons, and 6 Ford ambulance cars.

Tramway lines ran from the positions of the regimental aid posts to the canal, and were also available for conveying wounded to the advanced dressing stations. Eight trollies capable of carrying four stretchers each and 20 carrying one stretcher each were placed at the disposal of the A.D.M.S. of the assaulting divisions. Directing boards also indicated the route to the corps walking wounded dressing station and the corps main dressing station. It was intended that the walking wounded should make their own way back from the canal

BATTLES OF YPRES 1917.
MEDICAL SITUATION FRONT AREA XVIII & XIV CORPS ON JULY 31ST.



bank to the walking wounded collecting station by cross-country tracks and by the roads marked with directing boards, but lorries returning empty from the canal bank could pick them up, if necessary.

No. 24 M.A.C., which had been allotted to the corps, was assembled at the corps main dressing station. It was reinforced by fifteen motor ambulance cars from each of the four divisions of the corps, so that the officer commanding the motor ambulance convoy had 110 motor ambulance cars under his control for evacuating from the advanced dressing stations to the corps main dressing station and from there to the casualty clearing stations. Advanced car posts were established between the corps main dressing station and the advanced

dressing stations, from which cars went up to the latter as cars returned from them. Fifteen charabancs were also allotted to the corps for clearing the walking wounded from the corps walking wounded dressing station near Vlamertinghe.

The XIVth Corps.—The XIVth Corps (D.D.M.S., Colonel Whaite), on the extreme left of the British line and on the right of the French, had four advanced dressing stations, three for the 38th Division, on or east of the canal bank, and one for the Guards Division, at the Old Mill, just north of Elverdinghe. These were the two attacking divisions in the first phase of the battle.

The corps main dressing station was established at Canada Farm, north of the Elverdinghe-Poperinghe road, about one and a half miles west of Elverdinghe. It was manned by two field ambulances, one from the 38th and the other from the Guards Division.

The corps walking wounded dressing station, manned by a tent division of a field ambulance of the 20th Division, was established at Mouton Farm, on the same road about half a mile west of Elverdinghe.

There were divisional walking wounded collecting posts, one for the 38th Division at Mordacq Farm, half-way between Elverdinghe and the canal, and the other for the Guards Division at Bleuet Farm, half-way between Elverdinghe and Boesinghe. These were cleared by auxiliary buses to Mouton Farm, and from there by other buses to Mendinghem. Fifteen auxiliary buses were allotted to the corps for this purpose.

The divisional motor ambulance cars cleared from the advanced dressing stations to the corps main dressing station, and the Ford cars were sent as far forward on the tracks east of the canal as possible to help the work of the stretcher bearers.

The corps main dressing station was cleared by No. 4 M.A.C., but ten ambulance cars were allotted to clear direct to the casualty clearing stations from the advanced dressing station of the Guards Division, and ten to clear from the 38th Division advanced dressing stations. These cars were situated at the corps main dressing station. The remaining cars were available for evacuating from the corps main dressing station to the casualty clearing stations at Dozinghem and Mendinghem.

During the attack the Guards Division advanced dressing station moved from the Old Mill to Bleuet Farm, and all the motor ambulance transport of the field ambulances of the division were brought up to it. In the early morning of the

31st July a motor ambulance car was brought up to Boesinghe and a loading post established there. This was the first wheeled transport to enter Boesinghe. In the afternoon a horsed ambulance wagon was got across the canal, but was unable to proceed far owing to the condition of the ground. It had to be left there.

The approximate number of wounded of the Guards Division that were cleared to the corps walking wounded collecting post and main dressing station up to noon on the 2nd August was 52 officers and 1,468 other ranks, exclusive of wounded of other divisions, corps troops, and prisoners. No great accumulation of wounded occurred owing to the fact that the casualties were thus comparatively small. But the A.D.M.S. of the division, Colonel Fawcus, considered that if there had been large numbers the accumulation of wounded at the advanced dressing stations would have been excessive and that it would have been difficult to deal with them in accordance with the orders issued by the Corps D.D.M.S., which were to the effect that all the cases were to be dressed before being sent back direct to casualty clearing stations.

In commenting upon this order in his diary, Colonel Fawcus noted that if such a procedure was to hold good on future occasions more medical officers would have to be provided and larger accommodation made at the advanced dressing stations; and this would have necessitated the advanced dressing station being established much further back. He expressed the opinion that for an advance it was best to move and keep the advanced dressing station as near the line as possible, moving it as the line advanced; in fact, to make the advanced dressing station a loading post only and to clear all cases from it as rapidly as possible to a place further back, where the necessary dressings could be carried out in comfort. This procedure would have been in accordance with the R.A.M.C. Training Manual and Field Service Regulations; an advanced dressing station, as laid down in them, was not intended to be more than a post at the place where wounded brought back on stretchers could be loaded on to wheeled traffic. It is of some interest, therefore, to find a comment on the effects of a departure from this principle in consequence of an actual battle experience.

Subsequent Phases of the Battles.

During the subsequent phases of the battles of Ypres in 1917 there was very little change in the general distribution

of advanced and main dressing stations in the schemes of evacuation. The Second Army gradually took over ground from the Fifth Army, extending its line northwards by the Ist Anzac, IInd Anzac, and Canadian Corps. The Vth Corps had relieved the XIXth Corps from Fifth Army reserve on the 7th September, and was then on the left of the Ist Anzac Corps of the Second Army. It took over all the medical positions of the XIXth Corps. Its 9th and 55th Divisions took part in the battle of the 20th September. It was relieved on the 27th September by the IInd Anzac Corps, and withdrawn to a back area.

The Casualty Clearing Stations.

The casualty clearing stations at Remy Siding were restored to the Second Army on the extension of its front, its other casualty clearing stations being at Godewaersvelde (Nos. 11, 37 and 41), at Oultersteene, near Bailleul (No. 2 and No. 1 Australian), No. 53 C.C.S. at Bailleul, No. 2 Australian C.C.S. at Trois Arbres, and No. 50 at Mont des Cats.

A new casualty clearing station site, named Nine Elms, had been established near Poperinghe by the D.M.S., Fifth Army, early in September to take the place of the casualty clearing station site at Brandhoek. The site at Brandhoek had always been regarded as too far forward and too much exposed to the danger of shell-fire, but the Fifth Army Commander and his D.M.S. were desirous of retaining Brandhoek as a large casualty clearing station centre, with accommodation for some 3,000, in anticipation of the line advancing. The fears regarding this site were justified, for the three casualty clearing stations at Brandhoek, Nos. 32, 44, and No. 3 Australian, were shelled out on the 21st August, before the extensive accommodation provided by them had been of any material value. It was then decided to evacuate all the wounded by ambulance trains at once, and the nursing sisters were sent away. One of the nursing sisters had unfortunately been killed by a shell, and as shells were falling on the railway platform it was not possible to send an ambulance train to clear the wounded. The patients, however, were brought back by road to Remy Siding, and it is remarkable that five of them, two suffering from abdominal and three from chest wounds, who had been operated on during the day and were taken back to No. 10 C.C.S. at Remy Siding, apparently suffered in no way by the journey; and all—except one, who died six days later, and one of those wounded in the chest, who happened to

be among the most severely injured and was therefore retained in No. 10 C.C.S.—were sufficiently recovered to be transferred to the base by the end of the month. The two abdominal cases, it may be noted, had multiple perforations of the intestine.

This experience is of some importance as showing that a journey of twenty minutes to half-an-hour to a more secure locality farther back is not likely to be so great a risk to the patient as his retention in a more forward position which is in danger of being shelled by the enemy. The delay in getting a seriously injured abdominal case operated upon at the earliest possible moment was not, in fact, so much due to the length of the road journey back by ambulance car, as to the time taken in bringing him from the place where he fell to the point where he could be loaded on to the car. Colonel Soltau, the consulting physician of the Northern Armies, it may be noted, had also made an emphatic protest to the D.M.S. against retaining serious chest injuries in the forward position. The surgeons on duty at Brandhoek had also reported that the noise of artillery fire in the vicinity had a bad effect on the wounded, and that the locality was not suitable for retaining them under treatment, and the determination of the Army Commander and his D.M.S. to retain casualty clearing stations there must be regarded as strategically unsound from a medical point of view.

No. 44 C.C.S. was the first of the Brandhoek casualty clearing stations to reopen at Nine Elms. No. 3 Australian, after being parked during September at Remy Siding, opened there at the end of the month under the Second Army D.M.S. No. 32 remained at Brandhoek for a considerable time for the reception of walking wounded only. Up to the time of the hostile shelling on the 21st August it had carried out most of the serious abdominal operations, as No. 44 and No. 3 Australian did not commence to take in wounded until the 9th and 16th August respectively.

After Brandhoek had been abandoned the D.M.S. of the Fifth Army made preparations for bringing No. 32 C.C.S. and No. 10 C.C.S. to Elverdinghe still nearer the front. The D.G.M.S., however, refused to sanction this, and was supported by the G.O.C. of the XIVth Corps, who considered the locality too far forward for casualties of his corps, which it served, being treated there. The distance was 9,500 yards from the front line and within easy range of enemy mobile artillery in Houthulst Forest. The site at Elverdinghe, however, was prepared and huts erected on it in anticipation of an advance, but casualty

clearing stations were not opened there at any time during the battles. A detachment of No. 10 C.C.S. had been sent to take over the site from Remy Siding, but was recalled by orders of the D.G.M.S., and the Army Commander was informed by the Adjutant-General that No. 10 C.C.S. was not to be removed from Remy Siding without instructions from G.H.Q. The site at Elverdinghe had been heavily shelled on the 29th August, and was continually exposed to artillery fire and bombing from the air.

The desire, however, of the Fifth Army to have an advanced operating centre for abdominal injuries as far forward as possible was unabated, and positions such as Brielen, the cellars of the prison at Ypres and shell-proof dugouts were considered, but the consulting surgeons were not in favour of these being used.

The officer commanding No. 32 C.C.S. and a portion of his staff took up their quarters at Elverdinghe on the 5th November. The equipment and tentage had been moved there on the 12th October, when it was found that 40 of the marquees had been so much torn by fragments of shell that they had to be returned to store for repair. On the 8th November, however, it was definitely decided that Elverdinghe could not become a casualty clearing station centre, and work on the site was stopped.

The Work of Divisions and Corps.

When the Second Army extended its front with the Ist and IInd Anzac and Canadian Corps, the chief features in the work of collecting and bringing back the wounded were the long distances and heavy ground over which the bearers had to carry stretchers. During the fighting of the 20th and 21st September and 4th and 12th October the carry in the Ist Anzac Corps was in certain places as much as 8,000 yards, as, for example, from the front line to the Birr cross-roads on the Ypres-Menin road. Plank roads had been laid down, but were so slippery that it was impossible to use even the horsed ambulance wagons on them. The advanced dressing station of the corps was on the Menin road, opposite the Ecole de Bienfaisance. From there light railways and tram lines were available.

The IInd Anzac Corps had little difficulty in this respect in its first attack on the 4th October, but in the two subsequent assaults of the 9th and 12th October the battlefield had been converted into a sea of mud. Six bearers were required for each stretcher, and it took five hours on the 9th October to bring the wounded from a regimental aid post to an advanced

dressing station. It was not possible to run special trains for them on the light railways, although in some cases trucks returning empty helped in bringing back sitting cases. Ambulance wagons and cars were frequently held up by traffic for an hour or more at a time. Notwithstanding these difficulties, most of the wounded were got back by night-time.

The conditions on the 12th October were even worse. The stretcher bearers had to carry wounded a distance of 6,000 yards, and it took seven hours to get the patients back to the advanced dressing station. A large number of infantry was detailed to assist in carrying them, and arrangements were made to collect them into such shelters as were available in the front line and supply them with food and blankets until it was possible to bring them back. In his observations on these conditions the D.D.M.S. of the corps, Colonel C. W. Begg, remarks that 600 fresh stretcher bearers were required on each divisional front every twelve hours, with a maximum of 300 stretchers and 1,000 blankets. The total casualties passing through his dressing stations between the 4th and 18th October were 362 officers and 11,243 other ranks, of whom 231 officers and 4,412 other ranks were stretcher cases. The numbers included 12 officers and 424 other ranks gassed.

When the Canadian Corps relieved the IInd Anzac Corps on the 17th October and took over its medical posts, the stretcher bearers' work was considerably lightened by the laying of trench mats along the tracks.

In the earlier phases of the battles this system of relay posts was not so much in evidence, and more use was being made of trolly lines. Thus the 20th Division (XIVth Corps), in the battle of the 16th–18th August, depended chiefly on a trolly line running to Fusilier Farm and the canal bank. The line was broken several times by shell-fire, but was speedily repaired. The division was given 200 infantrymen to assist the stretcher bearers. They were organized into four parties of one officer, two N.C.O.s and 47 other ranks each, and had been given a short training in first aid and bearer work for one week. The parties were used on relay posts, on the trolly lines, with wheeled stretchers, and as loading parties at entraining and detraining posts and at advanced dressing stations.

Pack transport was used in some divisions for bringing material forward to advanced dressing stations and collecting posts in the later stages of the operations. The 25th Division, for example, when it was attached to the Ist Anzac Corps in September, had six pack horses allotted to each field ambulance.

The material, consisting of panniers, comforts, reserve dressings, rations, water, splints, sheets and blankets, directing flags, and other articles. was brought in limber wagons to Shrapnel Corner, south of Ypres, and there loaded on to the pack horses.

But notwithstanding the difficulties in bringing the wounded back to the dressing stations, the general organization led to so rapid an evacuation that in one or two instances the casualty clearing stations were overwhelmed and the work of keeping them clear by means of ambulance trains was much delayed. This was specially so in the case of the clearing stations at Remy Siding on the first day of the battles. Wounded, both walking and lying down wounded, came there in large numbers, not only by motor ambulance convoy, charabancs, buses and lorries, but also in ambulance train coaches and empty trucks of supply trains.

The Organization of Relay Posts.

There were many examples of the organization of relay work by the stretcher bearers of individual divisions during the whole period of the battles. The number of relay posts varied according to circumstances, and the number of bearers in each according to the orders of individual A.Ds.M.S. As a rule the divisional or corps commander detailed 200 infantrymen under their own officers to assist the R.A.M.C. stretcher bearers ; and the regimental stretcher bearers were doubled. The relay posts were at distances of 500 to 800 yards from one another as a rule. In one division the number of stretcher squads at each post would be four, in another six. There was no definite rule. The bearers of No. 55 Field Ambulance of the 18th Division, for example, engaged in clearing regimental aid posts on the 12th October to Poelcappelle and back to Essex Farm, had a total carry of 4,500 yards, of which the last 1,500 yards was on a trolly line from Minte Farm. Forty stretcher squads were used, with an average carry of 800 yards. They carried back 250 stretcher cases. Derelict tanks were useful as shelters for relay posts, especially at a point called Delta House, where there were four derelict tanks.

The 9th Division, fighting on the right of the 55th Division on the 12th October, formed six relay posts from regimental aid posts at York Farm and Albatross Farm to cross-roads on the west of St. Julien, a distance of some 3,000 yards. There was an entraining point just south of St. Julien, and horsed ambulance wagons and Ford cars could come up to St. Julien ; but the larger cars could only work between California Farm

and the advanced dressing station at Duhallow. Thirty-two bearers were posted at each relay, with 200 infantry men from the division in reserve.

The IInd Anzac Corps formed four relay posts back to an advanced dressing station at Wieltje for the left division, and three for the right division to Frezenberg, where horsed ambulance wagons came up. The D.D.M.S. of the corps required 600 bearers, 250 from the field ambulances and 350 from other units, as already noted.

When the Canadian Corps took over its front it retained these two lines of relay posts ; but used a variety of means for getting the wounded back. In the operations of the 26th October hand carriage was used to Curve Farm, thence wheeled stretchers to Spree Farm, followed by another relay of hand carriage to Midland House, and from there to Wieltje by petrol tractors on tram lines. There were three or four relay posts to Frezenberg. From there motor ambulance cars were able to work on the 26th October. The corps had an advanced dressing station at Frezenberg, but a shell dropped on it on the 6th November, causing many casualties, six officers of the C.A.M.C. being killed and two wounded. Forty-four other ranks of the C.A.M.C. were also wounded.

The Use of Ambulance and other Trains in the Front Area.

Ambulance train coaches, belonging to No. 38 Ambulance Train, which had been constructed for use in the Macedonian theatre of war, were used on a broad-gauge railway between Ypres and Remy Siding.*

The use of the broad-gauge trains to bring wounded back to Remy Siding was carried out under the orders of the Fifth Army Commander, as he was anxious to save the roads.

On the 31st July the walking wounded who went to No. 3 Canadian Casualty Clearing Station at Remy Siding came down in great numbers by these trains and very few by road. They consequently arrived in large batches, instead of coming down in small numbers at a time by lorries and charabancs. If the latter procedure had been carried out they would have

* This ambulance train was not required in Macedonia ; it was accepted for France, and made its first trip on the 21st July 1917. The couplings, however, did not prove suitable to run with the ordinary French stock, and a breakdown occurred at St. Omer on the 18th August. The train was consequently put out of action on the 12th September 1917, and was then divided into two small trains to work in the front area until suitable steel wheels could be supplied to replace the wooden centre wheels of the coaches. These new wheels were fitted and the train returned to the ambulance train service on 23rd February 1918.

arrived at the casualty clearing stations earlier and been ready to fill the temporary ambulance train that was kept waiting there, but which had been delayed until the broad-gauge trains arrived from the front. The temporary ambulance train had been waiting at Remy Siding since 10 o'clock in the morning, and it took a long time before the large numbers arriving by the broad-gauge train could be got ready for entraining. The consequence was that the train did not leave until 2.30 in the afternoon. Further trouble arose from the fact that the empty supply trains bringing walking wounded cases from Vlamertinghe ran into the ambulance train siding at Remy, and by so doing prevented ambulance trains which were garaged down the line, coming up until the siding was clear. Consequently the congestion of the casualty clearing stations at Remy Siding on the night of the 31st July/1st August was excessive. The congestion could have been relieved by evacuating to Second Army casualty clearing stations at Godewaersvelde or to the hospitals at St. Omer by road. All available resources were placed at the disposal of the Fifth Army for this purpose by the D.G.M.S., but the D.M.S. of the army did not take advantage of them. Instead, he switched off the walking wounded from the XIXth Corps to the casualty clearing stations at Mendinghem. Fifty cars, however, were sent up to Remy Siding from St. Omer after midnight of the 31st July. They would have arrived earlier, but had to be employed in clearing patients to St. Omer from the medical units at Hazebrouck, which was being severely shelled in the afternoon and evening by long-range enemy artillery.

Light railways were employed to bring wounded to Remy Siding from the advanced dressing stations at the Ecole de Bienfaisance on the Ypres-Menin road, and from those at Lock 8 on the Canal and Woodcote House. Trains of four to eight trucks, carrying 80 or 180 cases, ran hourly, the average time taken on the journey from the Ypres–Menin road to Remy being one and a quarter hours. They were used chiefly by the Second Army after Remy Siding came under its control on the 20th September. The Second Army had then two other light railways with similar arrangements for evacuating wounded to La Clytte and Kemmel. The hourly service, however, broke down on account of damage to the line during the battle of Polygon Wood, on the 26th September, and only two full trains reached Remy Siding in consequence.

In order to avoid congestion at Remy Siding on the 4th October the D.M.S. of the Second Army arranged that only

half of No. 38 Ambulance Train should run from Ypres there with light cases of the 1st Anzac Corps and that the other half should run between Brandhoek and Godewaersvelde with the casualties of the Xth Corps, but eventually both sections of the train went to Godewaersvelde. In the attack on the 16th October some of these coaches were run from Dickebusch to Bailleul ambulance train siding, the wounded being taken from there to the casualty clearing station at Oultersteene by road. On the 10th November, the trains also ran from Reigersberg to Mendinghem. These various lines of evacuation from forward areas to casualty clearing station centres are shown in the sketch maps.

Shelling and Bombing of Medical Units.

During the whole period of these battles medical units of all descriptions were constantly shelled or bombed by aircraft. The shelling of the casualty clearing stations at Brandhoek and the sites prepared at Elverdinghe has already been mentioned. At Hazebrouck the office of the D.M.S., Second Army, and the medical units there, No. 15 C.C.S. and the New Zealand Stationary Hospital, had to move elsewhere when the town was shelled on the 1st August. One of the shells fell on No. 15 C.C.S. and completely destroyed part of its camp, but fortunately without causing casualties. The unit moved to Ebblinghem, half-way between Hazebrouck and St. Omer, and the New Zealand Stationary Hospital to Wisques, near St. Omer.

The list of incidents on pages 163 and 164 represents approximately the extent of enemy attacks at this period on medical units. They were of so exceptional a character as to give rise to the belief that they were deliberate. The medical units were indicated by the usual red cross signs on roofs of huts, and also on large squares on the ground such as could be seen by aircraft. The positions of casualty clearing stations had also been notified to the enemy.

A photograph taken from the air appeared in a German illustrated magazine " Die Woche " on the 4th August showing a British observation balloon moored near a medical unit and near the sign of the Red Cross belonging to the unit. The illustration drew the attention of the reader to the assumption that the Red Cross had been placed there to protect a balloon which was used in directing artillery fire. The photograph was sent by the General Staff to the D.D.G.M.S., who identified it as a photograph of the main dressing station of the XVIIIth

List of attacks on medical units of Second and Fifth Armies July to November, 1917.

Date.	Unit attacked.	Locality.	Remarks.
3rd/4th July	No. 1 Australian C.C.S.	Bailleul ..	One bomb, killing a nursing sister.
6th/7th July	No. 11 C.C.S. ..	Bailleul Ambulance Siding.	Air raid 2.30 a.m. Clear night. Airmen flew low. Dropped 7 bombs. Four R.A.M.C. and 23 patients killed. Five R.A.M.C., the chaplain and 63 patients wounded.
13/14th July	No. 15 C.C.S. ..	Hazebrouck	Three bombs. No casualties.
22nd July ..	No. 64 C.C.S. ..	Mendinghem	Four bombs 11 p.m. No casualties.
22nd/23rd July	No. 2 Australian C.C.S.	Trois Arbres	Two A.A.M.C. and 2 patients killed. Twenty patients wounded. Four bombs. Also shelled.
31st July ..	No. 46 Field Ambulance. M.D.S. XIXth Corps.	Brandhoek	Shelled morning of 31st July, and on and off since 19th June.
5th August..	XVIIIth Corps M.D.S. 1st/2nd Highland Field Ambulance.	Gwalia Farm	Shelled. Two R.A.M.C. and 1 A.S.C. killed, 25 other ranks wounded. This was the day following the date of illustration in "Die Woche." The shelling was deliberate.
16th August	No. 3 Australian C.C.S.	Brandhoek	Bomb 10 p.m. One medical officer and 1 orderly A.A.M.C. killed.
17th August	No. 17 C.C.S. ..	Remy Siding	Four bombs. 9.20 p.m. Casualties— *Killed. Wounded.* R.A.M.C. 6 13; Fatigue men 7 15; Officers' servants 1 5; German patients 13 6. No officer casualties.
17th August to 20th August	No. 61 C.C.S. ..	Dozinghem	Bombed 9.30 to 10.30 p.m. from 300 to 400 ft. Two officers and 3 sisters wounded, 1 other rank killed and 3 wounded. Four patients killed and 18 wounded.

Date.	Unit attacked.	Locality.	Remarks.
15th August 17th August 19th August 20th August	No. 4 C.C.S. ..	Dozinghem	Four officers and 4 other ranks wounded on the 17th, and 1 officer, 1 sister, and 28 other ranks on the 20th; 6 other ranks killed on the 20th.
20th August	No. 47 C.C.S. ..	Dozinghem	Fourteen other ranks killed. Seven officers, 2 sisters, and 45 other ranks wounded.
21st August	No. 44 C.C.S. ..	Brandhoek	Shelled all day. One sister killed. Two other ranks wounded.
29th August 31st August	No. 10 C.C.S. ..	Elverdinghe	Heavily shelled. Marquees in course of erection riddled with shrapnel. Red Cross frames on ground. One man wounded.
29th Sept.	No. 32 C.C.S. ..	Brandhoek	Bombs. No casualties. Ten marquees destroyed.
1st October..	No. 4 Stationary Hospital.	Arques ..	Bombed. Four killed and 5 wounded. Dental centre destroyed.
20th October	Nos. 37 and 41 C.C.Ss.	Godewaersvelde.	Bombed. One sister killed. Seven patients and 8 R.A.M.C. wounded.
29th October	No. 61 C.C.S. ..	Dozinghem	Bombed 11.30 p.m. One sister wounded, 3 patients killed. Three patients and 1 R.A.M.C. wounded.

Corps at Gwalia Farm, long after the balloon had left the vicinity of the dressing station, so that the photograph had probably been taken before the series of attacks on the medical units, and had no doubt been published in explanation of these attacks at a later date. At least such was the conclusion drawn from this unusual action on the part of the enemy.

The increasing frequency with which casualty clearing stations were being shelled and bombed led to a memorandum being issued to armies by the General Staff at the beginning of August. The attention of Army Commanders was directed in this memorandum to the fact that a tendency existed to site casualty clearing stations too far forward, and pointed out that the most forward of these stations should always be

well in rear of the balloon line, and as far away as possible from ammunition dumps, aerodromes, railheads, or other targets likely to draw the enemy's fire.

Provision for the Treatment of Wounds during the Battles.

A special feature of the work of the medical services during these battles was the provision that had been made for the surgical treatment of wounds in casualty clearing stations. For this purpose the number of surgical teams and other personnel sent to the Fifth Army was greatly in excess of what had been possible during previous battles. A conference was held by the D.G.M.S. on the 23rd June, in which the D.D.G. discussed with the Ds.M.S. of Armies and of the L. of C., and the D.D.M.S., XVth Corps, the general arrangements for the forthcoming operations, especially with regard to the additional surgical teams, for whom provision had been made by the maintenance of reserve operating sets to enable three extra operating tables being worked in each of twelve casualty clearing stations. These sets were held in the base depôt of medical stores at Boulogne, and were supplemented by surgical cloaks, sheets, and other operating-room equipment in twelve sets maintained for the purpose, at the request of the D.G.M.S., by the Red Cross Advanced Stores at Ham-en-Artois near Lillers.

On the 17th July, the D.G.M.S. had arranged for 15 surgical teams and 100 R.A.M.C. other ranks to go to the Fifth Army from the First Army, 10 surgical teams and 100 other ranks from the Second Army, and 25 surgical teams and 200 other ranks from the Third Army, in addition to 32 surgical teams from hospitals on the L. of C. Subsequent orders, however, restricted these numbers considerably, and the position on the 1st August was that the Fifth Army had, in addition to its own medical personnel, 57 surgical teams (25 from the Third Army and 32 from the L. of C.), 40 additional medical officers (18 from the First Army, 14 from the Third Army, 2 from No. 20 Field Ambulance, G.H.Q., 4 from No. 59 C.C.S., G.H.Q., and 2 from the L. of C.), and 275 other ranks R.A.M.C. (200 from the Third Army, 50 from No. 20 Field Ambulance, and 25 from No. 59 C.C.S.).

These numbers varied from time to time during the battles, but they represented more or less the proportion of additional surgical assistance sent to the casualty clearing stations engaged.

In the final phases of the battles of Ypres the additional personnel in casualty clearing stations consisted of 46 surgical

teams, 21 additional medical officers, and 195 other ranks of the R.A.M.C. in the Second Army; and 28 surgical teams, 15 additional medical officers, and 140 other ranks R.A.M.C. in the Fifth Army.

The accommodation in the Fifth Army casualty clearing stations was expanded to provide for 1,000 casualties in each. Consequently a very large number of huts and tentage, as shown in the following table, was provided :—

Number of tents and huts in casualty clearing stations of the Fifth Army during the battles of Ypres, 1917.

Hospital marquees—		
Large	32	1,754
Small single	261	
Small new pattern	686	
E.P.I.P.	28	
Canadian pattern	21	
Hospital small double	720	
Hospital large I.P.	6	
Ward huts		94
Bell tents		720
Other tents		88
Other huts		145

Large numbers of stretchers and blankets were also sent to the armies engaged, in fact, during the year 1917, the ambulance trains delivered to units in army areas 17,835 stretchers, as follows :—

Stretchers supplied to Armies in 1917.

January	396
February	551
March	1,290
April	3,807
May	186
June	1,507
July	1,908
August	1,638
September	2,168
October	2,234
November	1,050
December	1,100
Total	17,835

What became of the enormous number of stretchers sent up to armies was at all times a mystery to those whose duty it was to endeavour to recover them.

In addition large numbers of stretchers were held in army dumps; in fact by the end of the year the Second Army in the Ypres area had a reserve of 19,443 stretchers in the casualty clearing stations and in the six corps of which the army was then composed.

Large reserves of blankets and stretchers were also held at No. 4 Stationary Hospital, Arques, for delivery to army areas. The reserve consisted of 2,300 stretchers and 6,000 blankets. This reserve had been established at St. Omer in 1915, and had been maintained ever since, but it was decided in the middle of September 1917, that it would be no longer necessary to maintain the reserve there. Steps were subsequently taken by the D.G.M.S. to hold a large reserve in the casualty clearing station at Hesdin, under his own control.

The Surgical Results.

It is interesting to compare the resources placed at the disposal of the Fifth Army with the resources placed at the disposal of other armies during previous battles, and also the surgical results. They are shown in the following tables.

In order to compare surgical results, enquiry was made by the D.D.G.M.S. as to the deaths amongst wounded in the hospitals on the L. of C., who were received from the Second Army during the first week of the battle of Messines, 7th to 13th June, and from the Fifth Army during the first week of the Ypres battles of 1917, 31st July to 6th August. The results were as follows :—

Comparative Results of Wound Treatment in Second and Fifth Armies, during the first week of Messines and Ypres Battles, 1917.

	Second Army, Messines, 7.6.17 to 13.6.17.		Fifth Army, Ypres Battle, 31.7.17 to 6.8.17.	
No. of wounded admitted to C.C.Ss.		18,492		21,733
No. of deaths in C.C.Ss.		629		817
No. received in L. of C. hospitals		16,290		16,768
No. of deaths in L. of C. hospitals		162		177
No. of deaths on ambulance trains		13		4
No. of C.C.Ss. employed		15		15
No. of M.Os. employed :—				
(*a*) from the army	116		110	
(*b*) from other sources	100		179	
(*c*) Total	——	216	——	289
Sisters employed		259		405
Other ranks employed :—				
(*a*) Own army	1,342		1,173	
(*b*) Other sources	443		1,389	
(*c*) Total	——	1,785	——	2,562
X-ray outfits		8		9
Percentage of deaths to wounds :—				
(*a*) In C.C.Ss.		3·4		3·7
(*b*) In Base Hospitals		0·9		1·0
(*c*) Total deaths from wounds admitted		—— 4·3		—— 4·6
Percentage of M.Os. to the number of wounded admitted to the C.C.Ss.		1·16		1·86

Reinforcements sent to Casualty Clearing Stations in various battles.

Battle.	Period.	Armies engaged.	No. of C.C.Ss. employed.	From own army.			From other armies G.H.Q. and L. of C.			No. of X-ray Outfits.	No. of wounded admitted during first week.	No. of casualties, M.O.s, first week.	No. of casualties, R.A.M.C., other ranks, first week.
				No. of M.O.s	No. of Sisters.	No. of other ranks.	No. of M.O.s	No. of Sisters.	No. of other ranks.				
Neuve Chapelle.	10th to 15th March 1915.	First ..	7	43	29	457 (*a*)	8	6	25	—	8,181 (*b*)	9	30
Ypres Battle	22nd to 28th April 1915.	Second	7	55	39	582	7	8	5	—	8,081	10	59
Loos ..	25th Sept. to 1st Oct. 1915.	First ..	12	91	75	1,131	7	—	64	2	24,324 (*c*)	31	146
Somme ..	1st to 7th July 1916.	Fourth	16	154	130	1,895 (*d*)	20	7	39	9	42,212	47	336
Vimy Ridge and Arras.	9th to 16th April 1917.	First ..	11	100	99	1,263	15	23	62	2	5,342	26	210
		Third..	13	124	174	1,495	35	18	89	3	23,696		
Messines ..	7th to 14th June 1917.	Second	15	116	141	1,342	100	118	443	8	18,492	21	200
Ypres Battles	31st July to 6th Aug. 1917.	Second	9	77	91	969	13	6	39	7	3,905	41	317
		Fifth ..	15	110	128	1,173	179	277	1,389(*e*)	9	21,733		

(*a*) Includes 49 Indians. (*b*) Includes 1,501 Indians. (*c*) Includes 1,404 Indians. (*d*) Includes 72 Indians.
(*e*) Includes 922 permanent base men or men of labour battalions.

The percentage of deaths amongst wounded on the L. of C. was therefore practically 1 per cent. amongst those from the Second Army, against 1·05 per cent. amongst those from the Fifth Army, but the deaths on the ambulance trains were about three times less in the battles of Ypres than in the battle of Messines Ridge.

As regards surgical operations the following table shows the number of wounded admitted into casualty clearing stations of the Second and Fifth Armies between the 31st July and 16th November, 1917, with the numbers operated on in them.

Statistics of the number of wounded on whom operations were performed in the Casualty Clearing Stations of the Second and Fifth Armies between 31st July and 16th November 1917.

Casualty Clearing Stations.	Number admitted.	Number operat edon.	Percentage operated on.
Remy Siding Group—			
No. 2 Canadian	20,497	6,016	29·6
No. 3 Canadian	18,721	4,673	25·0
No. 10	17,343	5,002	29·0
No. 17	17,361	5,816	30·2
Nine Elms Group*—			
No. 3 Australian	7,073	2,107	30·0
No. 44	8,234	2,377	29·0
Brandhoek—			
No. 32	5,349	1,253	23·9
Godewaersvelde Group—			
No. 37	6,572	1,373	22·5
No. 11	6,883	2,000	30·5
No. 41	6,823	2,028	30·0
Bailleul Group—			
No. 2	3,267	878	29·0
No. 53	5,026	1,212	40·0
No. 1 Australian	4,011	2,111	51·0
No. 2 Australian	3,167	1,474	46·0
Dozinghem Group—			
No. 4	11,447	3,811	35·0
No. 47	12,233	4,464	36·0
No. 61	10,932	4,183	38·0
Mendinghem Group—			
No. 12	13,109	3,603	28·0
No. 64	11,179	3,490	30·0
No. 46	12,637	3,552	27·5

* At Brandhoek during August.

It will be observed that in casualty clearing stations receiving comparatively small numbers of wounded the percentage of operations was naturally very much higher than in those receiving large numbers of wounded; the greatest percentage of operations being 51·0 in No. 1 Australian C.C.S. of the Bailleul group, out of 4,011 admissions, and the smallest 25·0 per cent. in No. 3 (Canadian) C.C.S., out of 18,721 admissions, although it ought to be stated that the majority of admissions into No. 3 (Canadian) were walking wounded cases and therefore not requiring the same extent of operative interference. In the hospitals specially detailed for seriously wounded, such as No. 4 at Dozinghem, the comparatively high number of 35 per cent. was operated upon out of 11,447 admissions, but No. 32 C.C.S. at Brandhoek, which received severely wounded, had the small percentage of 23·9 per cent. out of 5,349 admissions, although it must be noted that after August 21st this casualty clearing station was receiving walking wounded only.

The total number wounded and the number of operations, to which these figures refer, were 199,864 wounded and 61,225 operations, or 30·6 operations amongst every 100 wounded admitted. The operations included all operations undertaken for cleansing of wounds and excising damaged tissues, in slightly wounded as well as in the more severely wounded.

The Mustard Gas Attack.

In addition to the wounded, numbers of cases injured by mustard gas came to the casualty clearing stations. The first mustard gas attack took place in the Ypres area on the night of the 12th/13th July after a heavy bombardment, 1,800 cases being admitted to the casualty clearing stations on the 13th July. Large numbers of gassed cases were again admitted on the 11th and 12th September, and on the 17th October it was stated that one-third of the casualties occurring at that time were due to gas, and that the case mortality was higher.

Analysis of Nature of Wounds.

An attempt was made during these battles to analyse the nature of the wounds admitted during twenty-four hours on the 21st and the 27th September, with the following results:—

Among 10,789 British wounded on the 21st September—
77 were hand grenade wounds.
17 bayonet wounds.
2,933 bullet wounds.
2,142 shrapnel wounds.
3,867 high explosive shell wounds.
209 gassed.
1,544 uncertain causes.

Among 756 German wounded—
264 were bullet wounds.
363 shell wounds.
120 uncertain causes.
9 gassed.

On the 27th September, of 2,932 British wounded admitted in the twenty-four hours :—
16 were hand grenade wounds.
8 bayonet wounds.
600 bullet wounds.
836 shrapnel wounds.
1,325 high explosive shell wounds.
106 gassed.
41 uncertain causes.

and of 88 German wounded—
22 were bullet wounds.
52 shell wounds.
2 gassed.
12 uncertain causes.

Sickness during the Battles.

The sickness during the period of the battles was comparatively slight. Most of the patients were treated in divisional or corps rest stations, although an average of 0·3 to 1·0 per cent. of strength had to be evacuated weekly to the base. The wastage from sickness was thus considerably less than wastage from wounds. In the Fifth Army, for example, the records show that 1,805 officers and 40,899 other ranks were sent to the base sick, as compared with 4,159 officers and 100,688 other ranks wounded between the 1st July and the 10th November 1917.

CHAPTER IX.

THE BATTLE OF HILL 70, AUGUST 1917.

The Battle of Hill 70 was fought between the 15th and 25th August, 1917, by the 2nd and 1st Canadian Divisions of the Canadian Corps in the First Army area, and resulted in the capture of Hill 70, which had been reached but not held in the Battle of Loos, and also the mining suburbs on the outskirts of Lens. The fighting was of an exceptionally severe character, and the casualties were heavy, especially from mustard gas.

The *2nd Canadian Division* medical services were directed by the A.D.M.S., Colonel H. M. Jacques, who had established a main dressing station with No. 4 Canadian Field Ambulance under Major Macdonald at Fosse 10, and a main dressing station for walking wounded by No. 6 Canadian Field Ambulance under Lieut.-Colonel Murphy at Aix-Noulette. There were both a narrow-gauge and a broad-gauge railway running up towards the positions from which the attack was launched, and an advanced dressing station was placed at each railhead, relays of bearers bringing the wounded back from the regimental aid posts to these positions. From the advanced dressing stations both sitting and stretcher cases went back by rail to Fosse 11, chiefly by the narrow-gauge railway, and from there the stretcher cases were taken by motor ambulance cars to the main dressing station at Fosse 10, and the walking wounded by the narrow-gauge railway to Aix-Noulette. The assistance afforded by the use of this line was so great that it became unnecessary to use lorries or other vehicles for the conveyance of the walking wounded. The plan of evacuation worked throughout smoothly and without hitch, and no delay or congestion occurred at any point. No. 8 M.A.C. and fifteen motor lorries were employed in evacuating from the main dressing stations to No. 22 C.C.S. at Bruay.

The 2nd Canadian Division was again engaged on the 21st August, when the arrangements were of a similar nature and worked equally well. Casualties during this attack were heavier, over 700 being admitted to the main dressing station at Fosse 10, and about eighty to Aix-Noulette.

The 1*st Canadian Division* (Colonel Wright, A.D.M.S.) had relieved the 6th Division before the attack and taken over the field ambulance posts established by it. Much work had been done by the latter division in preparing advanced dressing stations and regimental aid posts in and around Loos, Maroc, Philosophe and the forward area in deep dugouts and cellars, which were well protected, conveniently placed and capable of accommodating over 500 stretcher cases. The main dressing station was situated in a school at Noeux-les-Mines, where there was spacious and well-planned accommodation for receiving and treating large numbers of wounded The walking wounded dressing station was at Barlin. Each battalion on going into the line was furnished with twenty-five stretchers and a box of medical comforts supplied by the Canadian Red Cross Society. The clearing from the regimental aid posts was carried out by two of the field ambulances, augmented by bearers of the third field ambulance. One hundred extra bearers were also detailed from each of the two attacking brigades to assist in bringing wounded to the advanced dressing stations, and men of the pioneer battalion also helped in carrying the wounded. Roads leading to the front were in such good condition and had escaped destructive shell-fire to such an extent that the motor ambulance cars were able to run into the most advanced stations, greatly relieving the work of the bearers. There was a tram-line, but it had been destroyed and was of little use.

On the night of the 17th/18th August, the enemy heavily bombarded the 1st Canadian Division area with gas shells, and rendered the work of clearing the wounded very difficult, as well as causing many casualties amongst the bearers. As soon as it was ascertained that mustard gas shells were being thrown prompt measures were instituted at the advanced dressing stations to combat their effects. The patients were stripped in the open air and then brought into the advanced dressing station, where they were bathed from head to foot in soda solution, their eyes washed with the solution (one per cent.), and covered with gauze, and each patient given thirty grains of soda bicarbonate internally. The patients were then dressed in pyjamas and evacuated as stretcher cases. Only a few required inhalation of oxygen. The value of this early treatment was shown by the good condition in which the patients arrived at the casualty clearing stations.

No. 12 M.A.C. cleared from the main dressing station to the casualty clearing stations, the severely wounded going to

No. 7 C.C.S., then established at Bracquemont, a suburb of Noeux-les-Mines. The walking wounded were sent to No. 22 C.C.S. at Bruay in lorries.

As Maroc and its vicinity were heavily shelled on the first day of the attack, the advanced dressing station there was not used, and evacuation took place chiefly through the advanced dressing station at Philosophe.

The casualties in the 1st Canadian Division were heavy. From the commencement of the attack on the night of 17th/18th August up to 5 p.m., on the 18th August, 75 officers and 2,546 other ranks had been admitted to its field ambulances, in addition to 8 German officers and 249 German other ranks, and during the succeeding night 8 officers and 390 other ranks had been collected and casualties were still coming in.

The operations of the 1st and 2nd Canadian Divisions were carried out to relieve pressure against the British in the Ypres salient, and were conducted against a much superior force of the enemy, thus explaining the heavy casualty list.

CHAPTER X.

THE DUNKIRK–NIEUPORT AREA, 1917.

THE front line of the coast sector taken over from the French by the XVth Corps on the 11th June, 1917, extended from the sea to St. Georges on the Yser Canal. The line from the sea was on the right bank of the canal near Lombartzyde, and then crossed it to St. Georges, which was on the left bank. At the time when the area was taken over, two divisions, the 32nd on the right and the 1st on the left, occupied this line, with the 66th Division in reserve.

The area consisted of two zones of country, dunes and sandy beach on the north, and flat ground intersected with canals, drains or dykes on the south. The town of Nieuport was practically in the front line. The evacuation of wounded from the area was difficult, as many of the roads were much exposed to fire and direct observation. Carries by bearers were long and tedious, especially through the dunes and sands, and relays had to be arranged. Walking wounded on the left sector, however, could make their way back on the firm sands of the coast.

The front line covered a distance of some four miles. Along it seven regimental aid posts of varying capacity were established, some sheltering six and others as many as twenty stretcher cases. The aid posts were capable of withstanding any artillery fire except a direct hit by a large shell, and were completely protected against gas. There were two collecting posts, both on the right sector close to the regimental aid posts. A bearer sub-division of a field ambulance was posted to each.

There were three advanced dressing stations, so placed that they could be accessible by cars. They were all in extensive cellars capable of withstanding direct hits by 8-in. shells, two of them on the left sector at Nieuport Bains and Oost Dunkirk Brewery, with a total capacity for 250 stretcher cases, and the third at Nieuport, for sixty stretcher cases. The last had electric light and an electric fan, and all were fully protected against gas. Dugouts in the dunes on the coast near Groenendijk Plage were used as collecting posts.

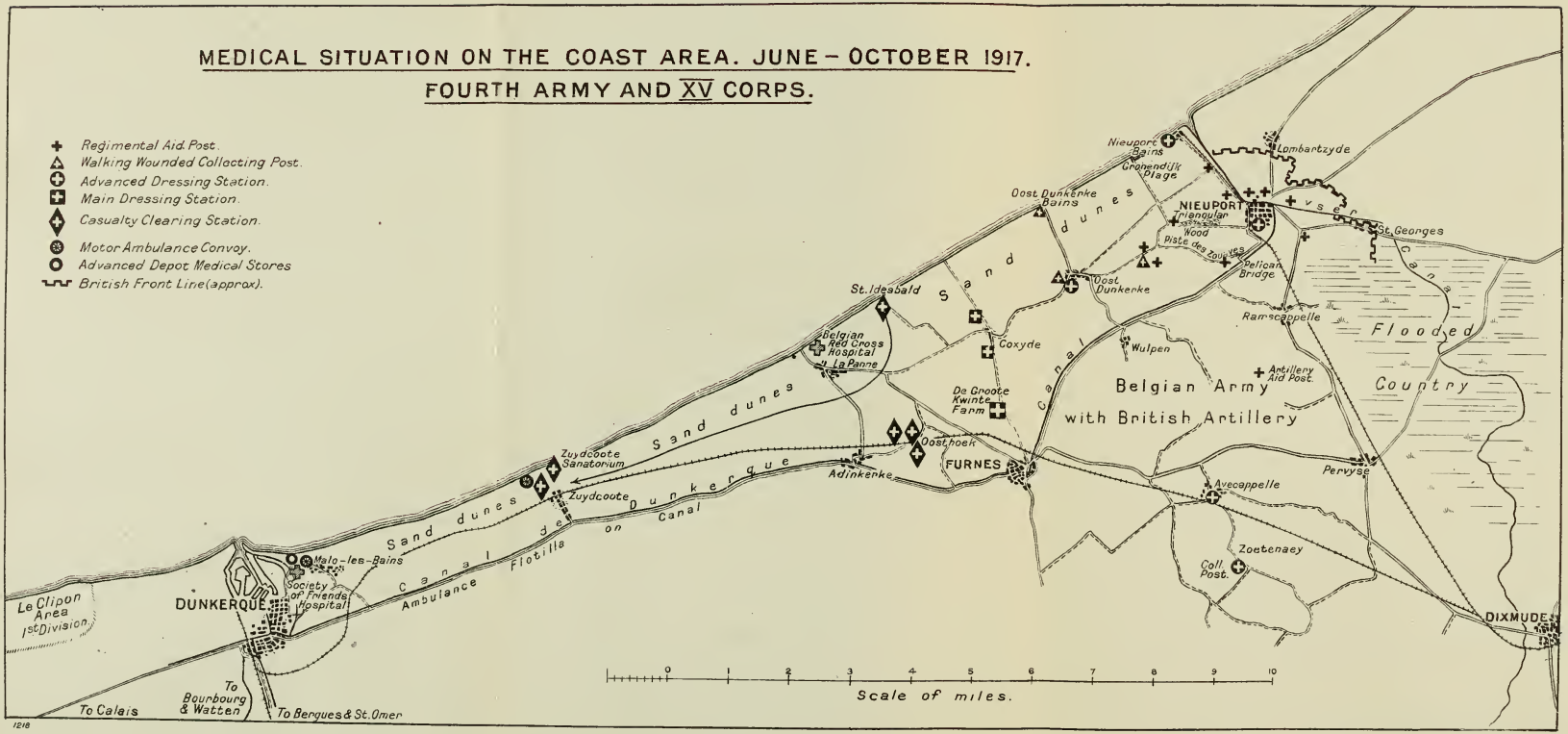
There were three walking wounded collecting stations. Two were for the left sector at Oost Dunkirk Bains and Oost Dunkirk Town, each serving a different route of evacuation. The third was for the right sector and was two miles outside Nieuport on the main Nieuport–Coxyde road. The routes of evacuation from the left sector were by the coast route, and by a Decauville line running along an inland road to Coxyde. The right sector had three routes of evacuation from Nieuport to the Oost Dunkirk road, one via Triangular Wood, another via Piste des Zouaves, and the third via Pelican Bridge and Wulpen Bridge. A Decauville line ran along all these roads, and all lines of evacuation joined up at the Oost Dunkirk–Coxyde road, whence the route was to the corps main dressing station. Wheeled stretchers were used to bring wounded to the advanced dressing stations.

The D.D.M.S. of the XVth Corps, Colonel Newland, on arrival in the area formed a corps main dressing station at De Groote Kwinte Farm, where there had previously been a French medical unit, on the road between Furnes and Coxyde. It was opened on the 18th June. This corps main dressing station was seven miles from the front line, and had ten Adrian huts and a large number of hospital marquees. It also had a large operating theatre, and was eventually equipped to receive 1,200 at one time, special arrangements being made in it for gassed cases. The more serious cases amongst the wounded went direct, however, to the casualty clearing stations. A complete field ambulance formed the personnel of the corps main dressing station.

Only two casualty clearing stations, No. 1 Canadian and No. 24, went with the XVth Corps to the coast area. They were opened at Oosthoek, near Adinkerke, where there had been a hutted hospital presented to the French and maintained by an American lady, Mrs. Turner. The hospital had 16 huts in all, 8 of which were ward huts for 18 beds each. They were taken over by No. 1 Canadian Casualty Clearing Station, British huts and tentage being added.* No. 24 was opened some time afterwards near No. 1 Canadian at Oosthoek in Nissen huts.

When Surg.-General O'Keeffe arrived with the Fourth Army Headquarters, three more casualty clearing stations were brought up, Nos. 36, 39, and 34. No. 36 was opened in a portion of a large sanatorium on the coast at Zuydcoote, the

* Mrs. Turner followed the French troops to Roosbrugge, where Nissen huts were given to her in exchange for those left at Oosthoek.


MEDICAL SITUATION ON THE COAST AREA. JUNE – OCTOBER 1917.
FOURTH ARMY AND XV CORPS.
Regimental Aid Post.
Walking Wounded Collecting Post.
Advanced Dressing Station.
Main Dressing Station.
Casualty Clearing Station.
Motor Ambulance Convoy.
Advanced Depot Medical Stores
British Front Line (approx).
Nieuport Bains
Lombartzyde
Groendijk Plage
Oost Dunkerke Bains
NIEUPORT
Triangular Wood
Piste des Zouaves
St. Georges
Pelican Bridge
Oost Dunkerke
St. Idesbald
Belgian Red Cross Hospital
La Panne
Coxyde
Ramscappelle
Flooded Country
Wulpen
Antillery Aid Post.
Belgian Army with British Artillery
De Groote Kwinte Farm
Oostkoek
FURNES
Adinkerke
Pervyse
Avecappelle
Zoutenaey
Coll. Post.
DIXMUDE
Zuydcoote Sanatorium
Zuydcoote
Malo-les-Bains
Society of Friends Hospital
DUNKERQUE
Le Clipon Area 1st Division
To Calais
To Bourbourg & Watten
To Bergues & St. Omer
Sand dunes
Canal de Dunkerque
Canal
Ambulance Flotilla
Scale of miles.
0 1 2 3 4 5 6 7 8 9 10
1218
Malby & Sons, Lith.

greater part of the building being retained as a hospital by the French. No. 39 was established in tents at Oosthoek and opened at the beginning of August, at the same time as No. 24, the huts for which were not ready until then. No. 34 did not arrive in the area until later. It was sent at first to St. Idesbald, on the coast about one and a half miles north-east of La Panne, for the reception of infectious cases and nerve cases (N.Y.D.N.). There was an admirably equipped Belgian Isolation Hospital already there in ten pavilions and huts, and the intention was to take these over.

The site of the three casualty clearing stations at Oosthoek was on flat low-lying ground liable to become very wet, and the huts were consequently well raised on piles off the ground, and roads and duck-board paths were made. There was a good ambulance train siding at Oosthoek, sufficient to garage, if necessary, two ambulance trains. The accommodation in each of these three casualty clearing stations was approximately 1,000. No. 36 C.C.S., at Zuydcoote, could also accommodate 1,000 and St. Idesbald Hospital 200, or with the addition of tents 750. St. Idesbald, however, was too far forward. No. 34 C.C.S., which arrived there in August, was consequently closed, owing to danger from artillery fire, before any patients had been admitted, and was eventually opened in tents outside the Zuydcoote sanatorium on the 26th August.

Dr. Depage's Belgian hospital at La Panne, the " Ambulance Océan," and the Society of Friends' Queen Alexandra Hospital of 160 beds at Malo-les-Bains, placed beds at the disposal of the British. These were hospitals for the Belgians, but the latter, which had an agreement with the B.R.C.S. of the 29th July, 1915, had been under the administration of the D.M.S., L. of C., for the reception also of sick from British labour corps at the Dunkirk port. Serious wounds of the head, chest, and abdomen were, by arrangement with Dr. Depage, sent to his hospital on payment of three francs for each patient daily.

A large corps rest station to accommodate about 2,000 was established by the XVth Corps, near Zuydcoote.

There was thus ample accommodation for the sick and wounded of the area provided there was adequate means of evacuation. Evacuation was possible by road or canal to St. Omer and Calais as well as by ambulance trains. Surg.-General O'Keeffe's estimate of maximum requirements for evacuation by these three routes was six ambulance trains, carrying a total of 4,000, two motor ambulance convoys making two journeys daily to St. Omer or Calais, carrying a

total of 1,200, thirty charabancs carrying 800 sitting cases, and 12 ambulance barges, carrying 360 lying cases. This estimate was made on the assumption that the number of wounded on the first day of an active offensive on the coast front would amount to 10,000, and on the second day 5,000.

Two motor ambulance convoys, No. 26 and No. 10, and three ambulance flotillas, Nos. 3, 4, and 5, were allotted to him, No. 3 having been brought up from the Somme to Calais on the 29th July. Nos. 4 and 5 arrived at Dunkirk and Adinkerke on the 19th July, The barges took twelve hours to reach St. Omer, the distance from Adinkerke to Dunkirk being about twelve and a half miles and that from Dunkirk to St. Omer through Bergues and Watten thirty-five and a half miles.

Other medical units in the Dunkirk area were two mobile laboratories (No. 12 Hygiene and No. 19 Bacteriological), an advanced depôt of medical stores, No. 13, a mobile X-ray unit, and a mobile dental unit. They were all at Malo-les-Bains except the bacteriological laboratory and X-ray unit, which were placed at Oosthoek and Zuydcoote respectively. There were also three sanitary sections.

Medical arrangements for British Artillery with the Belgians.

Certain British artillery units were attached to the Belgian Army in the Dixmude front, and when the British held the coast sector a section of a field ambulance was detached for duty with it. The arrangements were that the sick and wounded of the artillery would be collected to an advanced dressing station and collecting post opened by it and transferred to the casualty clearing stations in the British coast area. Six motor ambulance cars were attached to it for bringing sick and wounded from the artillery aid posts, seventeen of which were formed by officers in medical charge of brigades of artillery and groups of heavy artillery. Five of the posts were reinforced by additional R.A.M.C. personnel and were provided with wheeled stretchers. They were in telephone communication with the group of motor ambulance cars. The advanced dressing station was at Avecappelle on the Dixmude–Furnes road, with a personnel of two medical officers and bearer squads and with four motor ambulance cars. The collecting post was established at Zotenay, also on the Dixmude–Furnes road, with one medical officer, bearer squads and two motor ambulance cars.

In response to a telephone or other message stating the number and particulars of casualties requiring to be removed, motor ambulance cars were to be sent from the XVth Corps main dressing station to remove sick and wounded to it. Arrangements had also been made with the Belgian authorities for casualties amongst British troops being received into Belgian dressing stations and Belgian casualties into the British dressing stations, according to circumstances.

Medical Work during operations in the Coast area.

Although no active operations of any magnitude were undertaken by the Fourth Army and XVth Corps on the coast, the narrow strip of country occupied by the British was constantly shelled and bombed and subjected to gas attacks. In addition, the enemy launched a determined offensive against the British front on the 10th July. The attack began at 7·45 in the evening after a heavy bombardment, and the 1st Division, holding the left sector, was driven back over the Yser Canal, two of its battalions being wiped out. Two R.A.M.C. officers of the division were missing, Captains Ward and Hayes. The 32nd Division, which was at first also driven back, held out. All the bridges between Nieuport and the sea were destroyed by the preliminary bombardment, and great difficulty was experienced in bringing cases back, in fact very few casualties were cleared from that portion of the front; but Captain H. A. Pallant, the officer in medical charge of the 1st Battalion of the Loyal North Lancashire Regiment, did good work in swimming the Yser and assisting back men who could not swim.

The total number of casualties admitted to the medical units during this attack up to the 12th July was 39 officers and 1,247 other ranks, of whom 21 officers and 741 other ranks were from the 32nd Division, and 13 officers and 222 other ranks from the 1st Division, the remainder coming from army and corps troops.

The enemy attack was not continued after the 12th July, but back areas were constantly shelled and bombed.

The advanced dressing station of the 32nd Division received three direct hits, one from a 12-in. shell which wrecked one of the entrances.

Malo-les-Bains and Dunkirk were frequently shelled by a 15-in. long distance naval gun. On the 27th June the shelling commenced in the early morning, and shells fell every seven minutes in Malo-les-Bains. One of them by a direct hit at

5·30 a.m. destroyed the Casino, which was occupied as offices of the XVth Corps Headquarters, killing twelve and wounding twelve of the clerks. The bombardment ceased at 11·30 a.m., after some forty-nine shells had been thrown. The wounded were taken to the Queen Alexandra Red Cross Hospital. The headquarters of the corps then moved to Bray Dunes Plage.

Dunkirk was again shelled by the same naval gun on the last day of September, most of the shells falling in the docks. La Panne hospital was shelled on the 1st and 11th September.

The corps main dressing station at Groote Kwinte Farm was heavily shelled in the afternoon of the 27th August, twenty-five shells falling in or near it in fifty minutes. The patients were rapidly evacuated, the only casualty being the Roman Catholic chaplain, who was killed.

The D.M.S. of the Fourth Army then decided that as the casualty clearing stations at Oosthoek were close up to the front and on the Decauville railway running from the front, a new main dressing station was unnecessary. All serious cases were then sent direct to the casualty clearing stations from the advanced dressing stations, and slight cases to the XVth Corps rest station.

The casualty clearing stations at Oosthoek had to be closed in September on account of the constant shelling in their vicinity. Although they were not actually hit, shells had dropped quite close to them on the 4th September, and the nursing sisters, forty-five in number, were withdrawn to No. 10 Stationary Hospital at St. Omer. Shelling continued during the day, and several fell near No. 24 C.C.S., although not actually dropping on it. Four hundred and seventy-six patients were then evacuated by train to the base, and 220 to No. 34 and No. 36 C.C.Ss. at Zuydcoote.

Enemy air raids were especially active in September, 270 bombs having been dropped on the last day of the month in the back area. The number of wounded during the month was 62 officers and 1,713 other ranks, chiefly from bombs and shell-fire. Air raids were also very frequent in October, as many as eleven out of fourteen occurring in the last fifteen days of the month.

Mustard gas attacks were commenced against the XVth Corps front about the same time as mustard gas was used against the Fifth Army front. They were of a specially severe character. The first cases were reported on the 11th July, and between then and the 25th July over 2,350 gas casualties had occurred, including 11 officers and 49 other

ranks of the R.A.M.C. The 49th Division, suffered so severely between the 22nd and 26th July, that it had to be withdrawn from the line. These attacks were continued in September and during the remainder of the period of British occupation.

Medical preparations for combined Naval and Military operations.

While the two divisions occupying the front line were thus subjected to constant gas attacks, and the reserve divisions, corps and army troops in back areas were being shelled and bombed almost daily, the 1st Division was isolated at Le Clipon, in a quiet area seven miles west of Dunkirk, undergoing special training for a combined naval and military attack on the coast behind the enemy lines.

The division went into training in the latter half of July, and no patients were allowed to be evacuated from the camp area for reasons of secrecy. A special hospital was then equipped to accommodate 250 patients in order to retain all sick of the division when in the training area. The hospital was manned by No. 1 Field Ambulance.

With a view to preparing them for the contemplated landing on the coast, the field ambulances were trained physically and in carrying loads, negotiating obstacles, loading and off-loading motor ambulances with special loads, packing panniers with modified contents, swimming and life-saving, semaphore signalling, night operations, and loading and off-loading from pontoons as a unit and in conjunction with the brigades to which the field ambulances might be attached.

The scheme involved the employment of a field ambulance with each brigade, each field ambulance consisting of 7 officers, 164 other ranks, and 6 mechanical transport drivers, with additional dressings and comforts. Two motor ambulance cars, 2 motor cycles, 4 handcarts, and 1 bicycle were to be taken with each field ambulance, but no other kind of transport was to be made available. A field day was held on the 19th September with one of the brigades, and 300 casualties handled satisfactorily.

The camp was given up towards the end of October.

The transfer of British units from the Coast area.

The British then abandoned the coast area. The D.M.S. of the Fourth Army closed his office at Malo-les-Bains on the 5th November, moving to Dury, near Amiens, but when the

D.M.S., Second Army, proceeded with the Second Army headquarters to Italy on the 16th November, Surg.-General O'Keeffe took over his duties in the Ypres area. After he left Dunkirk, the D.D.M.S., XVth Corps, remained in administrative medical charge of the area, until it was finally handed over to the French. Colonel Newland handed over his duties as D.D.M.S. of the XVth Corps to Colonel Whaite and became D.D.M.S. of the XIVth Corps, which was moving to Italy, and on the 17th November the XVth Corps area was handed over to the 36th French Corps.

The two casualty clearing stations, Nos. 34 and 36, at Zuydcoote remained open in October. When they were closed their equipment was brought to St. Omer in the ambulance flotilla barges.

No. 1 Canadian Casualty Clearing Station went to the First Army, and opened at Ruitz. Two of the flotillas, Nos. 3 and 4, were demobilized on the 18th November.

No. 24 and No. 39 C.C.Ss., were transferred to Italy, and No. 34 C.C.S. and other medical units to the Fifth Army south of the Somme, with the exception of No. 36 C.C.S., which after remaining parked for some time at St. Omer was transferred at the request of the Fourth Army Commander to Roosbrugge.

CHAPTER XI.

THE CAMBRAI OPERATIONS IN 1917.

THE preparations for the battle of Cambrai, commenced on the 20th November 1917, were conducted with the utmost secrecy by the G.O.C. and staff of the Third Army. There was no preliminary bombardment, the attack on the enemy defences being heralded by large numbers of tanks smashing through his wire, followed by an advance of infantry under an artillery barrage. The cavalry were in readiness to take advantage of any gap which might enable them to go through. French cavalry had also been brought up to co-operate with the British cavalry.

The sector selected for the attack was a front of some 3 to 4 miles of the Hindenburg line, from Gonnelieu to the Canal du Nord, just north of Havrincourt Wood. The first objective was to secure the Bourlon Wood north of the line, in the angle formed by the Cambrai–Bapaume and Cambrai–Arras roads ; the enemy near Cambrai was then to be rounded up.

The corps engaged in the battle were the IIIrd and IVth and the Cavalry Corps.

At the time of the first attack the divisions of the IIIrd Corps were the 6th, 12th, 20th, and 29th.

The IVth Corps divisions were the 36th, 56th, 62nd, and 51st, and those of the Cavalry Corps the 1st, 2nd, 3rd, 4th (Indian), and 5th (Indian) Cavalry Divisions.

Before the operations ceased the IIIrd Corps was reinforced by the 36th, 61st, Guards, and 9th Divisions, and the IVth Corps also by the 9th, Guards, 40th, 2nd, and 47th Divisions, some of these divisions being moved from one corps to the other as the situation demanded.

The VIIth Corps was on the right of the Third Army opposite Vendhuille with its 55th Division on the right of the IIIrd Corps.

The Vth Corps had joined the Third Army from the Flanders Front just previous to the battle and was in reserve.

The VIth Corps was on the left of the IVth Corps, with the XVIIth Corps further north on the right of the First Army.

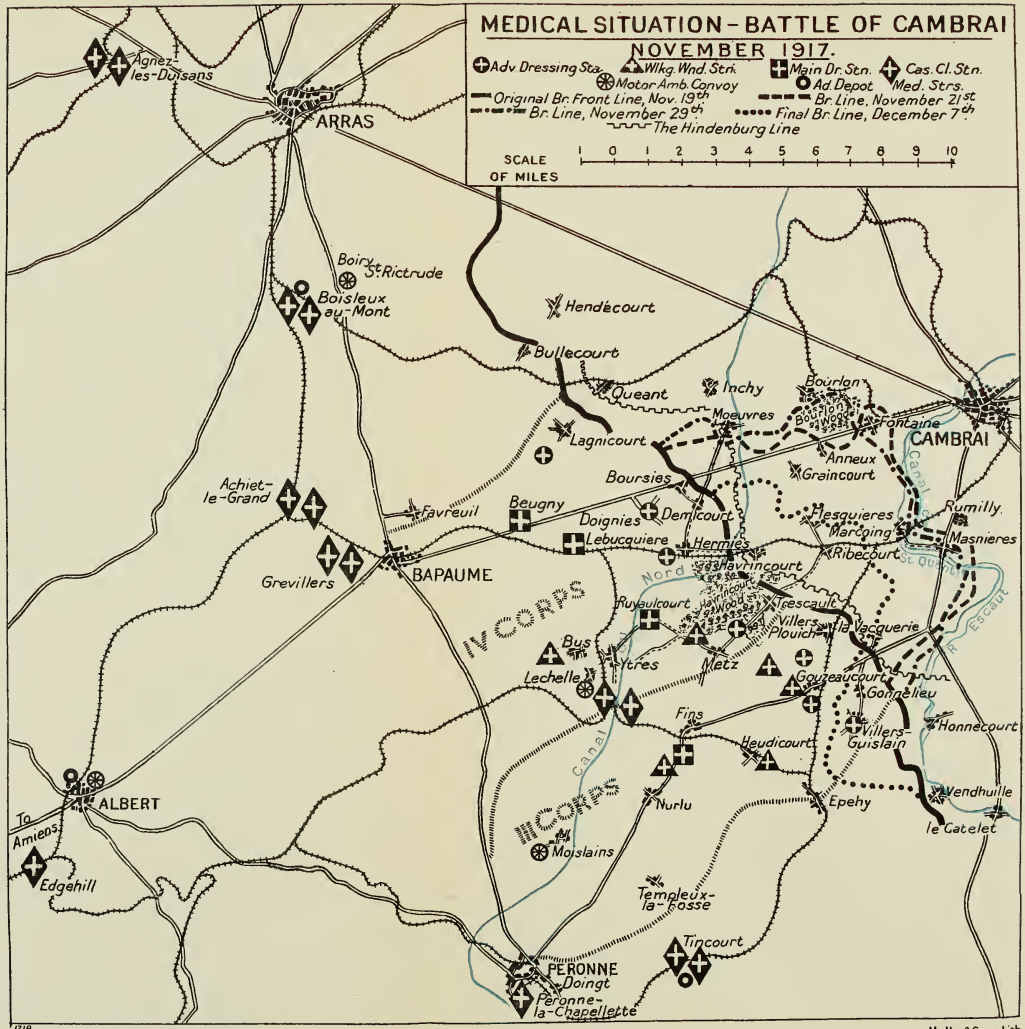
The divisions engaged at the commencement of the battle were the 12th, 20th, 6th, 51st, 62nd, and 36th Divisions, with the 29th and 56th in support. The 3rd and 16th Divisions of the VIth Corps made a subsidiary attack at Bullecourt further north.

The initial attack resulted in an advance of four and a half miles, the Canal de St. Quentin and the Escaut being crossed at Marcoing. Masnières on the opposite bank was occupied. A squadron of the Canadian Cavalry Brigade of the 5th (Indian) Cavalry Division went through and crossed the canal, but eventually withdrew at nightfall, after the greater part of its horses had become casualties.

The advance was continued on the 21st November, dismounted regiments of the 1st and 5th (Indian) Cavalry Divisions taking part. The outskirts of Bourlon Wood were reached that day.

Fighting was resumed on the 23rd November by the 56th, 40th, and 36th Divisions and dismounted cavalry of the 1st Cavalry Division, and Bourlon Wood was captured. Bourlon village was occupied the following day, but was recaptured by the enemy on the 25th November. On the 27th November a final effort was made to secure the position held in Bourlon Wood and ridge by the Guards Division and the 62nd Division, assisted by tanks.

The British offensive then ceased, but during the last days of November the enemy commenced his preparations for a counter-offensive, which he launched on the 30th November. The right of the British line south of Gonnelieu was attacked in flank and overwhelmed, the enemy advancing beyond the village of Villers Guislain, until held up by the 5th (Indian) and 4th (Indian) Cavalry Divisions, the Guards and the 61st Divisions, which came up from reserves. The divisions attacked were the 55th, 12th, 20th, and 29th Divisions, but the 55th on the right flank and the 29th on the left held their ground, the former falling back slightly, the latter not at all. Further north a massed German attack was launched between Bourlon Wood and the Canal du Nord against the 47th, 2nd, and 56th Divisions. The fighting was of the fiercest description, but these old army and Territorial divisions held out against overwhelming numbers of the enemy. An attack was also made in the centre of the British salient at Masnières, where the 29th Division, as already noted, maintained its ground. Fighting continued on the 1st and 2nd December, chiefly in the neighbourhood of Masnières. The enemy's attack then


MEDICAL SITUATION - BATTLE OF CAMBRAI
NOVEMBER 1917.
Adv Dressing Sta.
Wlkg. Wnd. Strs.
Main Dr. Stn.
Cas. Cl. Stn.
Motor Amb. Convoy
Ad. Depot
Med. Strs.
Original Br. Front Line, Nov. 19th
Br. Line, November 21st
Br. Line, November 29th
Final Br. Line, December 7th
The Hindenburg Line
SCALE OF MILES
0 1 2 3 4 5 6 7 8 9 10
Agnez-les-Duisans
ARRAS
Boiry St. Rictrude
Boisleux au-Mont
Hendecourt
Bullecourt
Queant
Inchy
Bourlon
Bourlon Wood
Moeuvres
Fontaine
CAMBRAI
Lagnicourt
Anneux
Graincourt
Boursies
Achiet-le-Grand
Favreuil
Beugny
Doignies
Demicourt
Hesquieres
Rumilly
Marcoing
Masnieres
Lebucquiere
Hermies
Ribecourt
Grevillers
BAPAUME
Havrincourt
Nord
St. Quentin
Canal
Escaut
Ruyaulcourt
Trescault
Villers Plouich
la Vacquerie
Bus
Ytres
Metz
Lechelle
Gouzeaucourt
Gonnelieu
Fins
Villers Guislain
Honnecourt
Heudicourt
Canal
Nurlu
Epehy
Vendhuille
le Catelet
ALBERT
To Amiens
Edgehill
Moislains
Templeux-la-Fosse
Tincourt
PERONNE
Doingt
Peronne-la-Chapellette
1218
Malby & Sons Lith.

became exhausted and, from the 4th December, fighting died down. The British line, however, was withdrawn to more secure positions on the following days, the new line running from north of Gonnelieu to the west of Marcoing, north of Flesquières and back to a point in the original British line south of the Bapaume–Cambrai road. South of this, a portion of the original British line was in the enemy's possession, the new British line running west of the villages of Gonnelieu and Villers Guislain.

General Medical Preparations for the Battle.

The casualty clearing stations of the Third Army at the time of the attack were Nos. 21 and 48 at Ytres, Nos. 5 and 55 at Tincourt, Nos. 45 and 49 at Achiet-le-Grand, Nos. 3 and 29 at Grevillers, Nos. 20 and 43 at Boisleux-au-Mont, and Nos. 19 and 8 at Agnez-les-Duisans, with No. 56 in the back area at Edgehill, and the Lucknow at Peronne-la-Chapellette. Some of the Third Army casualty clearing stations had just been moved to Italy, namely, No. 9 from Aveluy, and No. 38 from Bray.

The stationary hospitals at Frévent, St. Pol, Doullens, and Gailly, namely, Nos. 6, 12, 3 (Canadian), and 41, remained in the respective positions which they held during and after the battles of Arras.

The chief problem which had to be faced was the reinforcement of these casualty clearing stations with surgical teams and extra equipment, without creating an impression that important operations were impending.

The Army Commander was insistent on the maintenance of absolute secrecy, as any movement of reinforcements of casualty clearing stations that was observed by the enemy would indicate preparations for battle. Consequently only his D.M.S., Surg.-General Irwin, was kept informed of his intentions. Surg.-General Irwin had, however, informed his Army Commander that it would be impossible for him to obtain the necessary surgical help in his casualty clearing stations without the D.D.G.M.S. at G.H.Q. also being taken into his confidence. Permission was then given for him to see the D.D.G. at G.H.Q., on the understanding that the latter alone should be informed of the intentions of the Third Army Commander. Although the operations were planned in association with the General Staff at G.H.Q. no information whatever reached the Director-General's office or D.D.G. on the subject from either the

Adjutant-General or General Staff, but the D.D.G., Surg.-General W. G. Macpherson, had an interview with the General Staff, and let it be known that he was fully cognisant of the preparations that were being made. He was then given a free hand by the General Staff to act as he thought best to bring up the necessary reinforcements to the casualty clearing stations in a manner which would prevent any knowledge of the impending attack leaking out. Fortunately at this time there was considerable movement of medical units to Italy, and the D.D.G. took advantage of this fact, and of the fact that the operations in the Flanders area had ceased, to order the return of surgical teams of the Third Army to their units, and to obtain further teams by instructing Ds.M.S. of other armies and of the L. of C. to send medical officers and other ranks to No. 6 Stationary Hospital, Frévent, with a view to their being transferred to another area, thus creating the impression that they were joining the Italian Expeditionary Force. He also ordered the two reserve outfits, not yet distributed to casualty clearing stations, from Boulogne to Frévent for the same purpose. The D.M.S. of the Third Army was informed immediately this personnel arrived at Frévent, and transport was then sent by him to remove and distribute the surgical teams and other personnel to the casualty clearing stations to which they were allotted. In this way the casualty clearing stations were reinforced by surgical teams who had no knowledge until they arrived at the casualty clearing stations on the eve of the battle that any active operations were contemplated in the Third Army.

The number of teams sent to the Third Army in this way from other armies and from the L. of C., and the additional medical nursing services and other personnel is shown in the table on the next page.

In addition to the teams, belonging to his own casualty clearing stations, which had been temporarily attached to casualty clearing stations of the Fifth and Second Armies for the Battles of Ypres, the D.M.S.'s original requirements were three teams for each of the casualty clearing stations at Ytres to arrive on the 17th, 2 teams for each of those at Grevillers to arrive on the 18th November, and 1 team each for the two casualty clearing stations at Tincourt, for No. 20 at Boisleux-au-Mont and for the two casualty clearing stations at Achiet-le-Grand to arrive on the 19th November. It will be seen from the table, however, that the distribution of teams was slightly different.

Table showing additional Surgical Teams and Medical Personnel attached to Casualty Clearing Stations of the Third Army on 20th November 1917.

Casualty Clearing Station Centre.	Casualty Clearing Station.	Number of additional surgical teams.	Additional medical personnel.		
			M.Os.	Sisters.	O.R.
Grevillers	No. 3	2	7	8	52
	No. 29	3	11	14	52
Tincourt	No. 5	2	5	3	37
	No. 55	2	5	9	29
Ytres	No. 21	3	17	15	83
	No. 48	3	12	10	67
Agnez-les-Duisans ..	No. 8	nil	nil	nil	nil
	No. 19	nil	nil	nil	nil
Boisleux	No. 20	1	4	nil	24
	No. 43	nil	3	2	24
Achiet-le-Grand ..	No. 45	1	4	nil	26
	No. 49	1	3	3	36
Edgehill	No. 56	nil	2	nil	17
Peronne la Chapellette	Lucknow	nil	nil	nil	nil

The surgical teams were provided mainly by other armies, whilst the sisters came from the base and lines of communication hospitals, also from the stationary hospitals attached to the Third Army.

Additional medical officers and other ranks were provided by the field ambulances of the corps from which the casualty clearing stations were to receive casualties.

The general policy was that, while teams arriving from casualty clearing stations in other armies should take with them a set of equipment,* teams from the hospitals on the L. of C. would

* Each team from other casualty clearing stations was to bring with it the following operating requirements :—

1 operating table.
10 scalpels.
10 artery forceps.
4 dissecting forceps.
6 pairs of scissors.
2 large and 2 small retractors.
8 towel clips.
4 Lane's tissue forceps.
2 intestinal clamps.
An anæsthesia apparatus, and
An instrument steriliser.

be provided with the necessary equipment from the special reserve sets of outfits held at Boulogne and sent to Frévent.

Each corps of the Third Army was ordered to send from field ambulances parties composed of 3 medical officers, 3 N.C.Os. and 24 men to the various casualty clearing stations ; 4 parties from the XVIIth Corps, 3 from the VIth Corps, 2 from the IVth Corps, 2 from the IIIrd Corps, and 2 from the VIIth Corps.

The general arrangements then made for the clearing of the wounded and sick from the different corps are shown on the diagram.

Wounded from the Tank Corps were to be evacuated according to the arrangements of the division in whose area the tanks were operating. From the Cavalry Corps they were to be evacuated to the nearest casualty clearing station. Indians were, however, to go to the Lucknow C.C.S., but serious cases were to be sent to the nearest casualty clearing station.

Each corps had one motor ambulance convoy allotted to it. These were supplemented as required by fifty motor ambulance cars, which were sent to Frévent from the First Army, and placed at the disposal of the D.M.S., Third Army.

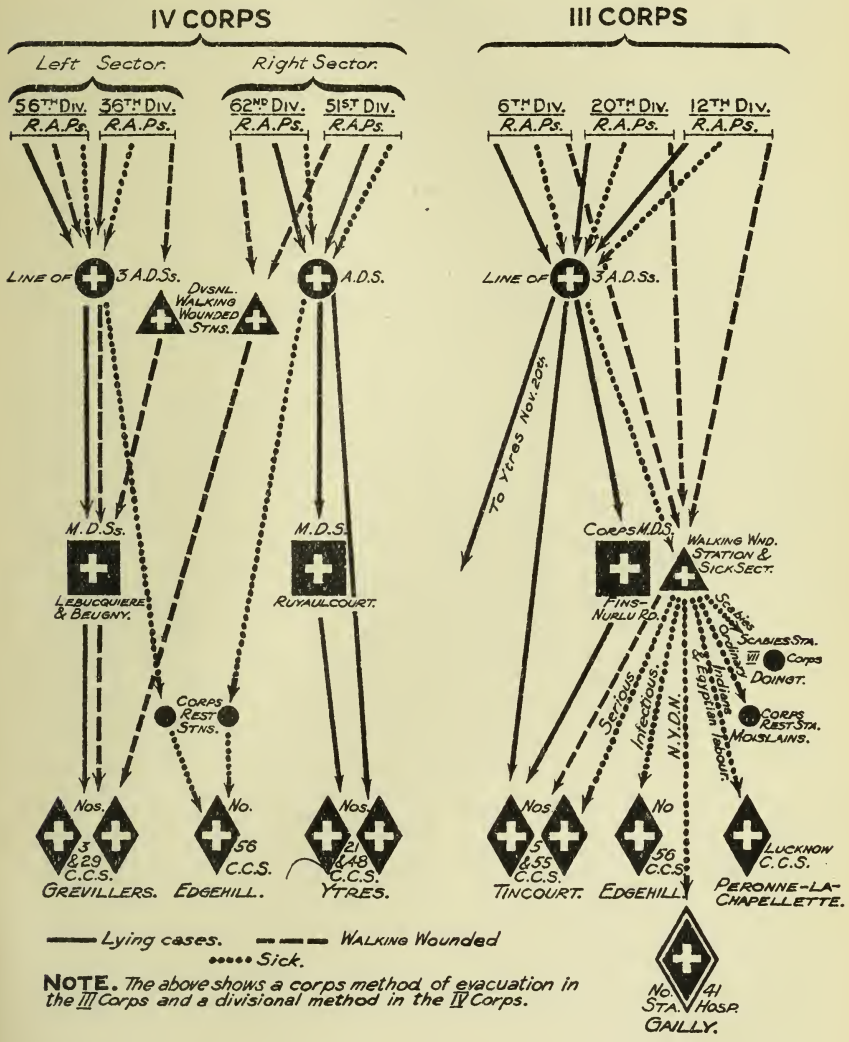
Seventy buses or charabancs were allotted for evacuation of the sitting cases, 30 to the IIIrd Corps and 30 to the IVth Corps, with 10 in reserve.

Reserves of stretchers and blankets were kept in dumps at Ytres (750 stretchers), Tincourt (500 stretchers), Grevillers (1,000 stretchers and 3,000 blankets). They were to be used for exchange of stretchers and blankets brought back from the front. They were placed in charge respectively of Nos. 45, 5, and 3 Casualty Clearing Stations.

Up to the 18th November no urgent wires for extra stores were allowed to be sent to the Base Depôts of Medical Stores, but on that date four lorry loads of stores arrived from No. 13 Base Depôt of Medical Stores, Abbeville, and 30,000 bandages and other equipment from the First Army.

Entraining medical officers were allotted to each ambulance train loading station, namely, at Tincourt, Grevillers, Ytres, Doullens, Villers-Bretonneux, Achiet-le-Grand, Edgehill, Boisleux-au-Mont, and Peronne-la-Chapellette. At those stations where there were two casualty clearing stations, an assistant entraining officer was also allotted. These officers were obtained from the casualty clearing stations or stationary hospitals in the locality.

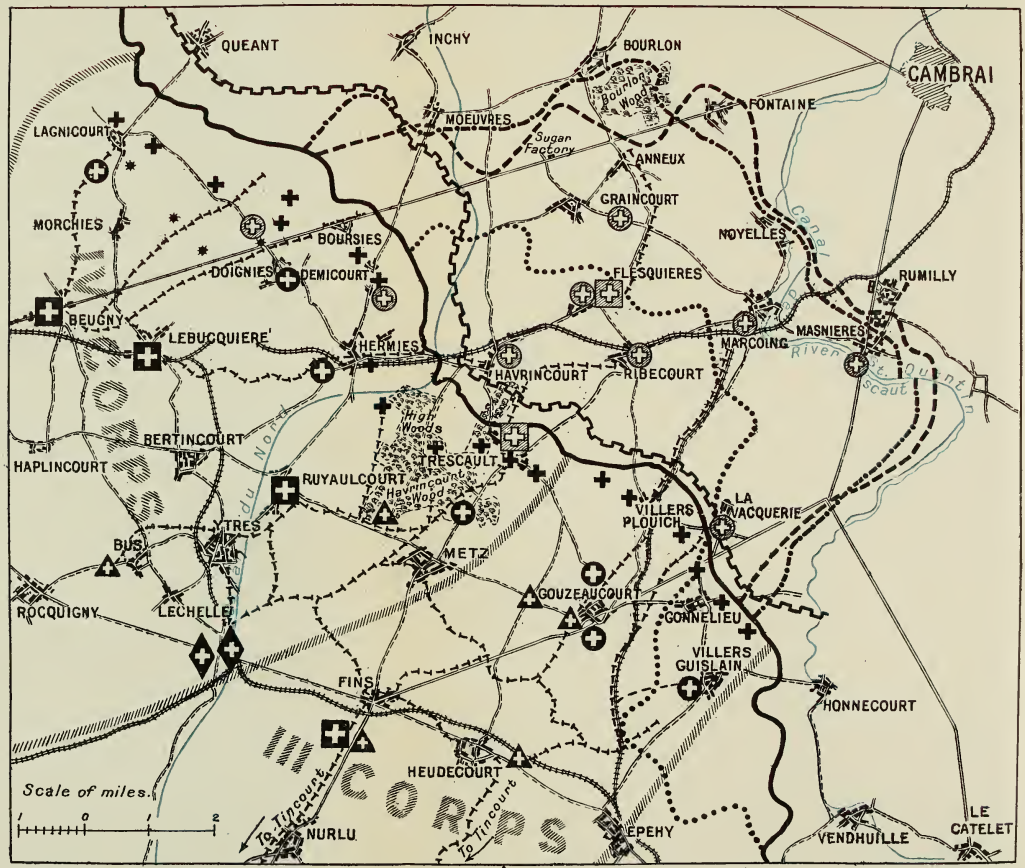
SCHEME OF EVACUATION OF SICK AND WOUNDED FROM IV & III CORPS DURING THE BATTLE OF CAMBRAI, NOVEMBER 1917.



NOTE. *The above shows a corps method of evacuation in the III Corps and a divisional method in the IV Corps.*

13. 2848 C. 5060. 141. 1500. 11. 23. H.M.S.O., Cr.

MEDICAL SITUATION IN THE IV & III CORPS DURING THE BATTLE OF CAMBRAI NOVEMBER 1917.



+ Reg. Aid Post. ⊕ Adv. Dr. Sta. ▲ Wkng. Wnd. Sta. ✚ Main Dr. Sta. ◆ Cas. Cl. Sta. Decauville Railway. Other Railways.

Original British Front Line, Nov. 19th. British Line, November 21st. British Line, Nov. 29th. Final Bt. Line. Dec. 7th.

The Hindenburg Line. Corps Area Boundaries.

NOTE. *The shaded conventional signs represent positions occupied by Advanced and Main Dressing Stations during the British advance. The Advanced Dressing Station at Villers Guislain was captured by the enemy during the German advance.*

12/8.2484? 5060. 141. 1500, 8.23.

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The usual policy of filling the casualty clearing stations in rotation by 150 stretcher cases at a time was followed, except where both lying and sitting cases were received, and then 200 were taken in at a time.

Medical Arrangements in Corps and Divisions.

The same secrecy had to be maintained in the organization of the corps and divisional medical services. The preparation and expansion of advanced dressing stations, walking wounded collecting posts and so on were prohibited until the evening before the battle. Divisions which were to take part in the attack occupied their sectors only two days before it was launched. But divisions holding the line until then prepared accommodation and gradually accumulated as much additional stores as possible, while the medical officers from the attacking divisions were sent up to reconnoitre the area.

The IIIrd Corps.—The IIIrd Corps headquarters with Colonel S. Macdonald as D.D.M.S., were at Templeux-la-Fosse. On the 9th November the divisions allotted to the corps were the 12th on the right, the 20th in the centre, and the 6th on the left, with the 29th in reserve ready to pass through the 20th and push on and capture the Canal crossings at Marcoing and Masnières. These divisions were resting in the back area and were only brought up during the three days preceding the offensive. The 20th Division alone was in the line before then. It had a divisional main dressing station on the Fins–Nurlu road, and advanced dressing stations at Gouzeaucourt and Villers Guislain, with a corps rest station at Moislains, and was evacuating its sick and wounded to Ytres and Tincourt.

The main dressing station was hutted, well equipped with electric light, operating theatre, and gas treatment centre, and could be made to accommodate 500.

The advanced dressing station at Gouzeaucourt was in cellars with ample accommodation and well protected. That at Villers Guislain was small.

Immediately before the advance, the 20th Division retained Gouzeaucourt as its advanced dressing station, Villers Guislain was handed over to the 12th Division, and the 6th Division had to form a new advanced dressing station, north of Gouzeaucourt.

A corps walking wounded station was also prepared alongside the corps main dressing station.

Additional equipment and stores consisting of 2,000 stretchers, 6,000 blankets, and 48 marquees were obtained.

No. 21 Motor Ambulance Convoy came under the corps administration and was at Peronne; but was moved to Moislains before the attack.

The whole of the medical arrangements were complete by the 19th, all posts being amply stocked with additional equipment and dressings.

It was decided that the lying down wounded were to be evacuated direct from the advanced dressing stations to the casualty clearing stations, as the position of the casualty clearing stations at Ytres favoured this. It was anticipated, however, that if walking cases were sent direct to casualty clearing stations, the latter might become rapidly congested with them, and it was consequently arranged to send the walking cases in the first instance to the corps walking wounded collecting station before transferring them to the casualty clearing stations.

The corps main dressing station was kept as a reserve in case the casualty clearing stations became congested.

Some of the A.Ds.M.S. of divisions were not entirely in favour of this method of direct evacuation from the advanced dressing stations, mainly on account of the difficulty in obtaining accurate returns for the divisional headquarters. The officers commanding the casualty clearing stations were also doubtful whether it would be possible to prepare returns and give anti-tetanic serum to cases evacuated to them direct. It was consequently decided that the field medical cards were to be made out at the advanced dressing stations and the anti-tetanic serum given on arrival of wounded at the casualty clearing stations. Events, however, proved that it would have been simpler for the anti-tetanic serum to have been administered at the advanced dressing stations and the field medical cards made out at the casualty clearing stations, instead of the reverse process.

The necessity of maintaining secrecy made it impossible to enlarge the casualty clearing station centres previous to the battle, and the fact that the casualty clearing stations were in groups of two instead of three added to the difficulties of direct evacuation to them from the advanced dressing stations.

The IIIrd Corps had at its disposal four covered ambulance wagons on the Decauville railway fitted with necessary equipment and heated by oil stoves. The railway system connected two of the three advanced dressing stations with

the corps main dressing station, the corps walking wounded station, and all the casualty clearing stations.

Decauville ambulance trains and motor ambulance cars were available for bringing back the stretcher cases. For the walking wounded there were the buses and returning empty Decauville trains.

Two Decauville ambulance trains, each with two ambulance wagons and one ordinary wagon, were formed, the ordinary wagon being for the conveyance of walking cases from the advanced dressing stations to Fins. From Fins horsed ambulance wagons and motor buses were assembled for bringing the walking wounded to the walking wounded collecting station. From there they were transferred to the casualty clearing stations at Tincourt by an improvised Decauville train, consisting of six trucks covered with tarpaulins, and by buses or lorries.

The time taken by the Decauville ambulance trains proved to be longer than was anticipated; for the circular trip from the corps walking wounded collecting station to Tincourt took five and a half hours instead of four hours.

Divisional motor ambulance cars were pooled to form an additional convoy.

Sick were sent to the corps walking wounded collecting station and transferred from there to the corps rest station at Moislains by buses or ambulance cars, with the exception of serious cases which went to the casualty clearing stations. They were thence, if necessary, transferred to No. 56 C.C.S. at Edgehill.

Buses and lorries worked well during the day of the 20th. The former were, however, withdrawn at 4 p.m. on that day, but a number of lorries was obtained in their place, together with twenty-five motor ambulance cars from the D.M.S. of the Army.

The IVth Corps.—In the IVth Corps the divisions on the northern sector were not likely to be heavily engaged and the arrangements made during the quiet periods of trench warfare were considered sufficient for all practical purposes as regards evacuation from that area. On the southern sector, however, it was anticipated that there would be great difficulties in connexion with evacuation as there was practically only one road from Flesquières–Ribecourt to Metz-en-Couture and Ytres. This line of evacuation for the 51st and 62nd Divisions was likely to be seriously blocked by traffic immediately after the attack.

A corps main dressing station was established by the 51st Division at Ruyaulcourt, and an advanced dressing station on the south of Havrincourt Wood, north of Metz-en-Couture. From this advanced dressing station stretcher cases were to be evacuated direct by the motor ambulance cars to the casualty clearing stations at Ytres. It was also intended to make use of the Decauville railway system, if possible, by the services of three trains running constantly from the advanced dressing stations to Ytres. A special siding had been prepared at the advanced dressing station for the purpose. The general intention was, as in the IIIrd Corps, not to use the corps main dressing station unless necessary, but to bring patients direct from the advanced dressing stations to the casualty clearing stations. The main dressing station was, however, to be kept ready for wounded, whom it might be necessary to evacuate by road, from the left sector.

A corps walking wounded collecting station was established by the 62nd Division at the south-west corner of Havrincourt Wood. Wounded were to be evacuated from that point to field ambulances at Bus by the Decauville railway. They were to be taken from Bus in buses to the casualty clearing stations at Grevillers.

The 36th Division on the left of the 62nd Division had one brigade in the line on the Canal du Nord, with two brigades in reserve and with the 56th Division on its left. Advanced dressing stations were at Hermies for the 36th, and at Doignies for the 56th Division, with main dressing stations at Lebucquière and Beugny.

Dumps of 1,000 stretchers, 3,000 blankets, 20 small marquees, and 20 oil stoves were formed at Ruyaulcourt and Bus, and there were in the corps area on the 18th November, exclusive of the mobilization equipment of the medical units, as many as 16,548 blankets, 3,828 stretchers, and 56 small marquees. The erection of marquees for the walking wounded posts was only permitted under cover of darkness on the night of the 19th/20th.

Thirty buses were allotted to the D.D.M.S. IVth Corps and assembled at Bus on the morning of the 20th November. No. 27 M.A.C. was attached to the corps, and the general supervision of evacuation by means of the field ambulance cars and motor ambulance convoy cars from the advanced dressing stations was to be under the officer commanding the convoy.

There were two light railway companies with the IVth Corps, No. 9 with its headquarters at Ytres, and No. 4 with

its headquarters at Bapaume. On No. 9 light railway company's system eight trucks were made available for wounded, each carrying twelve lying cases. A train composed of two or three of these trucks was normally kept at Ruyaulcourt. On No. 4 light railway company's system there were four covered ambulance trucks with capacity for twelve lying down in each, normally kept at Lebucquière or Beugny.

Walking cases were sent down on the returning empty trains.

No. 9 railway system had sidings running into the casualty clearing stations at Ytres, and No. 4 had detraining posts a little to the south-west of Bapaume, where the wounded were unloaded and taken by car to Grevillers, three motor ambulance cars with two medical officers and a stretcher party being stationed there for the purpose.

The VIth Corps.—In the VIth Corps, which was on the right of the IVth Corps during the battle, similar arrangements had been made with regard to the use of the light railway. Three different patterns of ambulance trucks had been constructed, one was an open truck for trench tramways carrying three stretchers, another type was a light railway truck, with framework and cover, taking twelve stretcher cases, and the third type was a truck heated by a coke stove and fitted with spring supports for twelve stretchers. It was covered with waterproof canvas, and could be loaded by four loading parties in forty seconds. It was comfortable and warm. It was proposed to supply twelve of these converted trucks for use with the VIth Corps.

Light railway sidings were prepared at No. 45 and No. 49 C.C.Ss. at Achiet-le-Grand, the lines running up to the main dressing station at Favreuil, north of Bapaume.

The Cavalry Corps.—The arrangement in the Cavalry Corps for the attack on the 20th November was for the wounded to be evacuated through the regimental aid posts and advanced dressing stations of the IIIrd and IVth Corps. Clerks were to be sent to the walking wounded collecting stations and to the casualty clearing stations at Grevillers and Tincourt for recording the admissions.

The Cavalry Corps headquarters were then at Villers Carbonnel. Its advanced headquarters went to Fins at 6 a.m., on the 20th November.

The cavalry brigades were accompanied by the pack mounted sections of cavalry field ambulances,* which were parked at

* *See* Chapter IV.

Fins. The light sections were to go forward as far as possible with dismounted stretcher bearers in the ambulance wagons. They were to be followed by the heavy sections and the motor ambulance cars. The heavy sections were to take over the advanced dressing stations in the event of a successful advance, and the cars were then to clear the wounded from them to the most advanced infantry medical units. The duty of the pack mounted sections was to supplement regimental aid posts and collect wounded to places along the roads or into barns or houses.

The D.M.S. of the Third Army was anxious to obtain information regarding the suitability of tanks for bringing wounded back from forward positions in cavalry action. A large store tank supplemented by a trailer was reported to be suitable for both stretcher and sitting cases ; but there is no record of its having been used.

The Medical Services during the Battle.

The IIIrd and IVth Corps Medical Services.—During the first phase of the battle, November 20th to 28th, the total casualties received into the medical units were 17,293, of whom 689 were officers, 15,038 other ranks, and 1,566 enemy wounded. The system of evacuating the seriously wounded direct to the casualty clearing stations at Ytres from the advanced dressing stations of both the IIIrd and IVth Corps was not altogether a success. By the evening of the 20th November Ytres was full of wounded and unable to take more. IIIrd Corps wounded were consequently switched off to Tincourt, and the IVth Corps wounded to Grevillers. Owing to the large numbers coming by ambulance car and by Decauville trains some of the cars and trains were kept waiting for one or two hours before they could be unloaded after arrival at Ytres and consequently there was considerable delay in getting the trains back to the advanced dressing stations. Parties of stretcher bearers had consequently to be sent to Ytres to expedite the unloading of the trains and cars.

When Ytres had thus to cease taking in casualties temporarily, and ambulance cars with the wounded were sent on instead to Tincourt, it became necessary to abandon the system of direct evacuation to casualty clearing stations from advanced dressing stations, on account of the long time the cars were away on the journey. The normal system of evacuation was then restored, namely, that of clearing the advanced dressing stations by the field ambulance transport to a main dressing

station and clearing the latter by the motor ambulance convoy to the clearing stations.

This experience of a system of direct evacuation from advanced dressing stations to casualty clearing stations is important, as it emphasizes the fact that wounded as a whole are not more advantageously dealt with in battle under such a system than they are under the normal system. The rule, however, that the comparatively small number requiring urgent operations, such as men wounded in the abdomen, should be sent direct to the nearest casualty clearing station or advanced operating centre always held good; but there was no advantage in dealing with all the lying down wounded in the same way. The general result was that wounded were held up for long periods either at advanced dressing stations pending the return of cars, or at casualty clearing stations until the cars could be unloaded or until the congestion at the casualty clearing stations could be relieved.

The difficulties which arose at Ytres in this respect did not occur to the same extent at Tincourt. The number of wounded from the southern sector was less. The Decauville train, however, from the advanced dressing station at Villers Guislain did not run well, owing to the tractor being unable to pull the wagons up the hill between the station and Tincourt.

The night of the 20th/21st November was very dark and wet, and some of the ambulance cars, which had to move without lights, got ditched. The roads had been damaged by shell fire and had become impassable in many places for wheeled vehicles. This was more especially the case in the IVth Corps area.

After the advance had been made to Marcoing, the Decauville railway was linked up with the German Decauville system and on the 21st ran up to Trescault, and subsequently to Ribecourt; but it was not possible to use it for the evacuation of seriously wounded from the IVth Corps.

During the advance on the 20th and 21st November the wounded of the IVth Corps had to be carried by hand from the aid posts and advanced dressing stations, as the roads leading to them had been destroyed by shell fire in many places. The 62nd Division had opened an advanced dressing station at Havrincourt in ruined buildings. The road between that place and Trescault was in a very bad condition, and the wounded had consequently to be taken back north of Havrincourt Wood across the Canal du Nord by hand carriage towards Hermies to the 36th Division advanced dressing station.

On the 23rd November the wounded both of the 36th and the 62nd Division had to be carried there by several relays, for a distance of about four miles in some cases, owing to the condition of the roads. An advanced dressing station was then established at Graincourt between Bourlon Wood and Flesquières. The 51st Division had formed an advanced dressing station at Flesquières immediately after it had been captured on the 21st November, and the advanced dressing station at Graincourt was cleared to it.

On the 25th November ambulance cars were able to run between Trescault and Ribecourt, although with considerable difficulty owing to the condition of the road, but later in the day a large number of cars were able to work between Flesquières and Ytres, via Ribecourt, Trescault, and Metz, which was the main line of evacuation from the right sector of the IVth Corps.

Wounded of the 36th Division on the left were evacuated through Demicourt and Hermies to Lebucquière, and thence by cars and Decauville railway to Grevillers. The walking wounded found their way to Ribecourt on foot and were taken back on the Decauville railway trucks from there.

The work of clearing aid posts and dressing stations by road was hampered not only by the damage done by shell fire, but also by the roads being congested with traffic of all kinds. Thus on the 20th November, when the 62nd Division advanced on Havrincourt, the roads became packed with guns and transport and it was impossible to use ambulance transport on them till late in the afternoon. The only roads suitable for transport were through Trescault to Havrincourt and through Havrincourt High Woods to the north-east corner of the wood. No motor transport could advance beyond these points, and as already noted an alternative route of evacuation was established north of Havrincourt to the 36th Division advanced dressing station at Hermies. By the 25th November, however, horsed ambulance wagons could be employed between Graincourt advanced dressing station and Flesquières, and thence through Ribecourt or Havrincourt.

The IIIrd Corps divisions were more favourably placed than those of the IVth Corps after the advance. On the 21st November the 29th Division had gone through the 20th Division and had opened advanced dressing stations at Marcoing and Masnières with a walking wounded collecting post at La Vacquerie, half-way between Gouzeaucourt and Masnières.

The 6th Division had moved its advanced dressing station to Ribecourt with a collecting post at Villers Plouich. The other divisions in the line, the 12th and 20th, had their advanced dressing stations at Gonnelieu and Gouzeaucourt.

The Cavalry Medical Services.—The A.D.M.S. of the 5th (Indian) Cavalry Division, a squadron of which had gone through the gap in the enemy's line on the 20th November, had assembled the pack mounted sections with their brigades, while the light sections and all motor ambulance cars were assembled at Villers Plouich ready to move to Rumilly and establish an advanced dressing station there. The heavy sections moved up to Fins from Bouchy near Tincourt during the day.

The 1st Cavalry Division bearers and ambulance wagons were brought up to Ribecourt ready to advance to Marcoing. A cavalry field ambulance, the Lucknow, of the 4th (Indian) Cavalry Division moved to Gouzeaucourt on the 22nd November, with its pack mounted section at La Vacquerie. The stretcher parties went forward to a relay post near Marcoing on the 21st November, and according to the diary of the A.D.M.S., there was no difficulty in collecting the wounded of the 5th Cavalry Division during the mounted operations on that day.

The majority of the casualties were in the Canadian Cavalry Brigade.

The Medical Services during the German Counter-Attack.

In the second phase of the battle, when the German attack took place on the 30th November, the disadvantage of having large immobile dumps of medical stores in advanced centres and casualty clearing stations near the front line became prominent. The medical units chiefly affected were those of the VIth Corps and the casualty clearing stations at Ytres. The advanced dressing stations at Villers Guislain and Gouzeaucourt fell into the hands of the enemy by 10 a.m., and some of the personnel of No. 36 Field Ambulance at Villers Guislain were captured. The personnel of the A.D.S. at Gouzeaucourt got away together with the wounded before the enemy entered the village, but a dump of stretchers, blankets, marquees, and other stores was left behind. Gouzeaucourt was, however, recaptured some hours later.

The Guards Division, which was brought down from the IVth Corps to this front, formed advanced dressing stations between Gouzeaucourt and Gouzeaucourt Wood, and on the road

between Gouzeaucourt and Fins, where the 20th Division also had its advanced dressing station. The 12th Division opened a new advanced dressing station at Heudicourt. Seven cars of No. 21 M.A.C. were ditched and had to be abandoned, but the drivers carried the wounded away with them and also brought back the carburetters. Three of the field ambulance cars were also put out of action. The main dressing station on the Fins–Nurlu road was cleared and the divisional rest station at Moislains was then prepared as a main dressing station, after the sick had been removed from it.

The German attack, on the 30th November, resulted in many losses in medical personnel of the IIIrd Corps. One officer was killed, three wounded, and six missing. Amongst other ranks, 1 was killed, 21 were wounded, and 163 missing.

The left division of the VIIth Corps, the 55th, had its advanced dressing station at Epehy when the enemy attacked. One officer and fourteen other ranks of the R.A.M.C. were captured while working between it and the aid posts.

As might be expected, the casualty clearing stations at Ytres were in imminent danger of capture. Orders were consequently issued for the nursing sisters to be sent back by ambulance cars, and the surgical teams distributed amongst the casualty clearing stations at Tincourt and Grevillers. The remainder of the personnel were to salve as much of the equipment as possible and retire to places of safety, leaving sufficient personnel in charge of the wounded until all could be got away. It was considered unnecessary, however, to move the casualty clearing stations, although they were frequently shelled, and their position undoubtedly hazardous.

In the northern sector, between the canal and Bourlon Wood, where the fighting was fiercest, 600 wounded had been collected to Flesquières and 350 to Havrincourt by 9·30 a.m. on the 30th November, in addition to a large number of walking wounded at Trescault. Every available car was sent up, but the roads were blocked by traffic, and recent shelling had rendered the road from Flesquières to Havrincourt impassable for ambulance cars. The railway lines from Ribecourt and Trescault and from Havrincourt to Grevillers were of great assistance. Many wounded were carried by hand from the Bourlon Wood to a relay post north of Anneux and thence by trolley line to a loading post between Anneux and Flesquières, where ambulance cars took them to the main dressing station. From the west of Bourlon Wood the stretcher cases were carried to a sugar factory on the Cambrai–Bapaume road, and

on to a car loading point on the road between Graincourt and the canal, whence they were taken by car along the canal road to Havrincourt advanced dressing station. Walking wounded went back by the same road and on to Trescault.

Bourlon Wood was severely bombarded by gas shells on the 30th November, seven of the medical officers becoming casualties. Owing to the thick wood and undergrowth it was difficult to disperse the gas, even when a strong wind was blowing. The dressing station at Flesquières was heavily shelled in the evening, three ambulance car drivers being killed, a wagon orderly wounded, and several horses of the field ambulance killed or wounded. The motor ambulance car service failed on account of congestion of the roads with other traffic, but two trains were run up on the broad-gauge railway from Grevillers to Havrincourt and relieved the congestion at the advanced dressing stations.

The relay post at the sugar factory on the Cambrai road had good shelter and accommodation in cellars, but there were no trenches from it backward. The position was isolated and all approaches to it constantly shelled, and it was doubtful whether the good accommodation and comparative safety in the cellars were not more than counter-balanced by the risk to bearers and the necessity of keeping the wounded for a considerable time before they could be got away.

The cavalry divisions during the enemy attack were dismounted and occupied sectors of the VIIth and IIIrd Corps front.

The Casualties.

The number of wounded admitted to medical units daily during the battle and evacuated to the base is shown in the table on the next page.

The greatest number of trains required for evacuation on any one day was eleven, on December 1st. On November 20th, eight were used, and on November 21st, 22nd, and 30th, seven. On December 2nd there were nine trains.

Including sick, the total number evacuated up to December 4th was 35,597, of whom 16,939 were lying, 17,163 sitting, and 1,495 German sick and wounded.

Number of Wounded admitted to Field Ambulances and evacuated to the Base.

Date.	Wounded admitted.			Total.	Wounded evacuated.			Total.
	Officers.	Other ranks.	Germans.		Officers.	Other ranks.	Germans.	
Nov. 20	153	2,838	222	3,213	62	1,179	75	1,316
21	119	2,623	690	3,432	139	3,253	605	3,997
22	63	1,467	416	1,946	80	1,604	330	2,014
23	43	1,039	41	1,123	20	748	99	867
24	107	2,275	62	2,444	87	1,906	82	2,075
25	53	1,290	18	1,361	55	897	41	993
26	53	1,139	24	1,216	53	1,309	51	1,413
27	41	1,089	75	1,205	11	305	10	326
28	59	1,288	—	1,347	86	1,647	34	1,767
29	37	715	—	752	20	299	62	381
30	87	1,916	—	2,003	74	1,590	7	1,671
Dec. 1	246	4,438	49	4,733	201	3,603	13	3,817
2	156	3,731	40	3,927	123	3,478	521	4,122
3	58	1,074	6	1,138	47	1,523	47	1,617
4	65	1,444	11	1,520	55	938	23	1,016
5	29	704	1	734	30	767	12	809
6	54	741	1	796	49	808	10	867
Totals..	1,423	29,811	1,656	32,890	1,192	25,854	2,022	29,068

CHAPTER XII.

THE GERMAN OFFENSIVE IN 1918.

THE numerical superiority of the German forces on the Western front, caused by the events in Russia, by the transfer of British divisions to Italy, and by the reduction of British divisions from 13 to 10 battalions, made a defensive policy along the whole line held by the Allies in France and Belgium imperative at the close of 1917.

When the XIVth and XIth Corps, with the 23rd, 41st, 7th, 48th and 5th Divisions, were transferred to Italy between the 9th November and 1st December of that year, several medical units were sent from France to Italy at the same time. The divisions were accompanied by their field ambulances and sanitary sections. Three sanitary sections preceded them for work at the base and on the lines of communication. Two motor ambulance convoys, No. 36 and No. 26; five casualty clearing stations, No. 9 from Aveluy, No. 38 from Bray, Nos. 24 and 39 from the Dunkirk area, and No. 37 from Godewaersvelde; Nos. 15 and 23 Mobile Hygiene and Nos. 7 and 14 Mobile Bacteriological Laboratories; No. 11 General Hospital from Etaples* and No. 38 Stationary Hospital, No. 32 Advanced Depôt of Medical Stores, and a Convalescent Depôt were transferred from France to Italy at this time. When two of the divisions, the 5th and 41st, returned to France early in March 1918, with their field ambulances and sanitary sections, two of the casualty clearing stations, No. 38 and No. 37, also came back, the former on the 19th March and the latter on the 28th April.

The transfer of British troops to Italy also involved special provision for the evacuation of their sick and wounded to France. For this purpose No. 57 General Hospital, then at Boulogne, was sent to Marseilles, and a large convalescent depôt, No. 16, was formed there. A second general hospital, No. 81, came to Marseilles from Malta in January 1918. Several ambulance trains, the number of which varied from

* This unit was occupied by the personnel of the Harvard Unit, U.S.A., but this personnel was transferred to No. 13 General Hospital, Boulogne, and the personnel of the latter went to Italy as No. 11 General Hospital.

time to time, were employed in evacuating sick and wounded from Italy to the Marseilles base ; while Nos. 15, 18, 21 and 26 Ambulance Trains were transferred permanently to Italy for use between the British front and base.

The fitting out of the British force to Italy thus diverted some of the medical units and personnel of the R.A.M.C. from work on the Western front at a time when personnel was becoming more and more difficult to obtain.

Colonel F. R. Newland had been appointed D.D.M.S. of the XIVth Corps in Italy, with Colonel S. L. Cummins as his A.D.M.S. for the Italian lines of communication, on the 28th October, but on the 23rd November the Second Army Headquarters moved to Italy and then Surg.-General R. Porter's place, as already noted, was taken in France by the D.M.S. of the Fourth Army, Surg.-General O'Keeffe. As Colonel Newland, however, had been appointed D.M.S. of the British Expeditionary Force in Italy with the rank of Surg.-General by the War Office, Surg.-General Porter returned to France on the 4th December, and pending early retirement on account of age did not resume an administrative medical appointment in the field.

In January 1918, the British front in France and Belgium was extended southwards in a continuous line of one hundred and twenty-five miles from Houthulst Forest in the north to Barisis, some six miles south of La Fère, on the Oise. This line was held from right to left by the Fifth Army from Barisis to north of Gouzeaucourt ; by the Third Army from that point to Gavrelle, north of the Scarpe ; by the First Army on its left to Armentières ; and by the Fourth Army* between Armentières and Houthulst Forest. Belgian troops were on the British left. French troops had taken the place of the latter on the coast sector.

Medical Arrangements previous to the German attack.

On the adoption of a defensive policy, the organization for defence consisted of a lightly held " forward zone," about one mile in depth, with a strongly wired " battle zone " some four miles in depth to which the troops in the forward zone were to retire in the event of attack. Behind the battle zone was a third defensive line. As the point at which the enemy's

* The Fourth Army ceased to exist as such on the return of the Second Army Headquarters staff from Italy, its Commander, General Sir H. Rawlinson being appointed to the Supreme War Council in Paris.
It was re-designated the Second Army from the 13th March, 1918.

anticipated attack might be launched was unknown, although the probability was that it would be against the Third and Fifth Armies in the direction of the coast ports, the D.G.M.S. was placed in the difficult position of determining how he might best reinforce the medical services of one army by transfer of units from another army in the event of sudden attack. His chief anxiety was caused by the forward position of many of the casualty clearing stations and the policy was enunciated that, in defensive operations, two casualty clearing stations should be open in a back area for one in a forward area, as distinct from the policy in offensive operations of having one casualty clearing station in a back area for two in a forward area.

The Directors of Medical Services of the Fifth, Third, First and Fourth Armies respectively, were Major-Generals B. M. Skinner, Sir J. M. Irwin, H. N. Thompson and M. O'Keeffe. The Director-General had obtained details of the arrangements made by them and their Corps D.Ds.M.S. and Divisional A.Ds.M.S., for the collection and evacuation of wounded in the event of the British line being pushed back. From most of the armies and formations maps showing positions to which casualty clearing stations and other units in army areas would move in the event of a retirement were submitted to the D.G.M.S. early in March. The D.M.S., L. of C. also submitted a statement of the action to be taken by him.*

Consequently, with a view to meeting the situation and ensuring that adequate reinforcements for medical services would be available for sending to any sector where a determined offensive by the enemy might take place, the following instructions were issued to the Ds.M S. of the Armies and L. of C. by the D.G M.S. on the 6th March 1918:—

" 1. *Casualty Clearing Stations.*

(*a*) The Fourth Army, which has a surplus of casualty clearing stations in proportion to divisions, will hold six of these casualty clearing stations ready to move at a moment's notice with the mobile equipment referred to in this office No. D.G. D/2279/71 dated 30th September 1916. (Copy attached.)†

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* Surg.-General T. P. Woodhouse had reached the age limit for retirement in December 1917, and his place as D.M.S., L. of C. was taken by Surg.-General Carr.

† The copy attached was as follows :—

" Recent moves of casualty clearing stations have shown that these units, so far as the transport required to move them is concerned, have become extremely unwieldy. For example, one casualty clearing station took 100 lorry loads and others 50 to 60 in order to move from one place to another.

" You will please arrange, therefore, for each casualty clearing station to have ready now a list of the articles which are necessary for carrying on emergent surgical work and providing nursing facilities at main dressing stations or other suitable places in advance of its present position, whenever the necessity of moving a casualty clearing station forward arises.

" This equipment should represent minimum requirements and should be limited to nine lorry loads, to enable a casualty clearing station to open for work immediately without waiting till the bulk of its material arrives."

" These casualty clearing stations will be used :—

(i) For reinforcing the casualty clearing stations in army areas whenever this becomes necessary.

(ii) For opening casualty clearing stations rapidly on sites further back in the event of casualty clearing stations in forward areas being temporarily out of action.

(iii) To open in any new area which may be taken over.

(iv) To form casualty clearing stations with any Force that may be sent to operate elsewhere.

" It is not intended that casualty clearing stations selected for this purpose should close down now, but they should be in a position to pack up and load on lorries the equipment referred to in the above quoted instruction with the least possible delay.

" All Ds.M.S. will notify to this office as early as possible the sites selected, should move under (ii) be required.

(*b*) Casualty clearing stations of one Army will be made available for wounded of the neighbouring Army, if required, under arrangements to be made by Ds.M.S. concerned in direct communication with one another.

" 2. *Motor Ambulance Convoys.*

" Armies not actively engaged will be prepared to transfer one or more ambulance convoys to another area when required to do so by D.G.M.S.

" In the event of any breakdown in the running of ambulance trains, reserve convoys are available for conveying wounded from the First and Fourth Armies to hospitals in St. Omer, and from the Third and Fifth Armies to hospitals in Amiens, Etaples and Abbeville.

" Ds.M.S. will report to D.G.M.S. whenever it becomes necessary to carry out evacuation by road, notifying the casualty clearing station which requires immediate relief, and the numbers in it waiting evacuation.

" 3. *Surgical Teams.*

(*a*) *From casualty clearing stations.*—Each casualty clearing station will be prepared to send, under Army arrangements, one surgical team as rapidly as possible to reinforce casualty clearing stations in the sectors attacked, whenever called upon to do so by D.G.M.S.

" Each team will take with it the equipment noted in attached Appendix, marked ' A,'* and bring it back on returning to its own unit.

(*b*) *From Lines of Communication.*—Teams have been earmarked to be sent up to casualty clearing stations as required from the L. of C. They will be sent to one or other of the stationary hospitals in army areas or adjoining L. of C. area, and handed over there to the Army concerned. The D.M.S. of the Army will then be responsible for distributing them to casualty clearing stations.

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* Appendix " A "—Equipment to be taken with a surgical team from a casualty clearing station :—

1 Operating Table.
10 Sharp Scalpels.
18 Artery Forceps.
4 Dissecting Forceps.
6 Pairs Assorted Scissors.
2 large, 2 small Retractors.
8 Towel Clips.
4 Lane's Tissue Forceps.
2 Intestinal Clamps.
Anaesthesia Apparatus.
Instrument Sterilizer.

" The following are the stationary hospitals most convenient for this purpose :—

No. 42 for Fifth Army.
No. 6 for Third Army.
No. 12 for First Army.
No. 10 for Fourth Army.*

" But Ds.M.S. of Armies concerned will arrange direct with D.M.S., L. of C., any modifications of the above arrangements which they may find more convenient, and notify to this office.

" It should be understood that the object of this arrangement is to enable Ds.M.S. to take over at recognized centres, and distribute by Army motor ambulance convoy teams coming from bases, such as Rouen and Treport, with women drivers or others who do not know the positions of casualty clearing stations.

" Ds.M.S. will be prepared to accommodate teams and drivers at the stationary hospital should they arrive at an hour which prevents them moving on at once to the casualty clearing stations.

" 4. *Special Surgical Sets.*

" The special surgical sets referred to in this office No. D.G. L.2279/95 dated 12th July 1917, will be sent to selected casualty clearing stations when surgical teams are sent up from the L. of C. Arrangements are being made to have the sets sent up if possible in advance of the teams, but Ds.M.S. will understand that, as the sector of operations is not known beforehand, it is possible that the teams may arrive simultaneously with, or before, the surgical sets. Every endeavour will be made, however, to get the sets up as early as possible.

" 5. *Other Personnel.*

(*a*) The instruction that three medical officers and twenty-five men are to be added to each casualty clearing station in an Army area from field ambulances in that Army will hold good, but it is hoped that shortly this addition to each casualty clearing station will be made more or less permanent.

(*b*) Other Armies not actively engaged will be prepared to send as many medical officers and other ranks as can be spared from field ambulances to casualty clearing stations of other Armies, when called upon to do so by D.G.M.S.

" 6. *Stretchers.*

(*a*) In addition to the stretchers held on the mobilization scale of field ambulances and on the expanded scale for casualty clearing stations, there should be a reserve of stretchers which need not exceed 2,000 in each corps, including the stretchers held by field ambulances in rest stations, and 2,000 in Army Reserve, including reserve of stretchers held in casualty clearing stations or motor ambulance convoys.

(*b*) Should these require to be replenished at any time, Ds.M.S. of Armies can obtain additional stretchers :—

(i) From ambulance trains, and
(ii) From a general reserve of stretchers held under D.G.M.S. control at G.H.Q.

" This latter reserve will not be drawn upon except during an actual offensive, and is intended as a reserve to replace any loss of stretchers which may arise in connection with the operations or to provide stretchers rapidly in the event of its being necessary to expand medical units in new areas.

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* These stationary hospitals were respectively at Amiens, Frévent, St. Pol and St. Omer.

"7. *Blankets.*

"Reserves of blankets will be held with the reserves of stretchers, in the proportion of two blankets per stretcher in the Corps Reserve, Army Reserve and G.H.Q. Reserve.

"8. *Primary Suture of Wounds.*

"The procedure in connexion with primary suture of wounds is noted in Appendix marked 'B,'* and Ds.M.S. will take steps to see that all medical officers concerned thoroughly understand what is required in this respect."

The Defensive position of Casualty Clearing Stations.

The Fifth Army.—The Fifth Army, on taking over from the French the line from Gouzeaucourt to the Oise, had its casualty clearing stations established at the following places :—

Noyon	No. 46.. ..	14	miles from the front line.
Cugny	No. 41.. ..	9	,, ,,
Ham	No. 61.. ..	13	,, ,,
Tincourt	Nos. 5 and 55..	$6\frac{1}{2}$	,, ,,
Roye	Nos. 50 and 53	25	,, ,,
Marchelepot	Nos. 32 and 34	17	,, ,,
Rozières	No. 47 ..	25	,, ,,
Peronne la Chapellette	Lucknow C.C.S.	13	,, ,,
Maricourt Plateau ..	No. 38 C.C.S...	16	,, ,,

(This casualty clearing station only arrived from Italy on the eve of the German offensive.)

A stationary hospital, No. 41, was at Gailly on the Somme, some 14 miles west of Peronne la Chapellette.

No. 42 Stationary Hospital, at Amiens, had come under the administration of the D.M.S., L. of C.

The Third Army.—By the beginning of March, the D.M.S. of the Third Army was withdrawing his casualty clearing stations from the two most forward positions at Ytres and Boisleux-au-Mont.

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* Appendix "B."—*Procedure in connection with Primary Suture of Wounds.*

"1. It is understood that all concerned in the treatment of wounds at casualty clearing stations and hospitals are now fully instructed in the principle of primary suture of wounds of the soft parts.

"2. Primary suture will, however, only be resorted to when the patient can be retained in the unit for seven days.

"3. In the case of casualty clearing stations this is only possible in quiet times and when large numbers of wounded are not anticipated.

"4. When it is not possible to retain patients in casualty clearing stations for seven days the wounds of the soft parts will be cleaned up and destroyed tissue excised. The patient will then be evacuated with the wounds open with as little delay as possible.

"5. Patients whose wounds have been dealt with in this manner, that is to say, whose wounds have been prepared in casualty clearing stations for delayed primary suture in the L. of C. hospitals will have "D.P.S." (*i.e.*, Delayed Primary Suture), clearly marked in block letters in the space under (3) of the Diary of Transference on the Field Medical Card envelope (Army Form W. 3118.a.).

"6. Wounded arriving at Base Hospitals so marked will be attended to with the least possible delay, and, if there are no indications to the contrary, delayed primary suture carried out."

SKETCH MAP SHOWING THE RELATIVE POSITIONS OF CASUALTY CLEARING STATIONS AND HOSPITALS TO THE FRONT LINE DURING THE PERIOD OF DEFENCE PREVIOUS TO THE GERMAN OFFENSIVE IN 1918.

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A site for Nos. 21 and 48 from Ytres had been selected near Beaulencourt three miles south of Bapaume and some ten miles from the front line. Nos. 43 and 20 from Boisleux-au-Mont were being withdrawn to Le Bac du Sud on the Arras-Doullens road between thirteen and fourteen miles from the front; one of the two casualty clearing stations, however, was being kept open at Ytres and Boisleux-au-Mont until the other was ready to receive patients on the new site.

The casualty clearing stations at Agnez-les-Duisans, Achiet-le-Grand, Grevillers and Edgehill were left in position, but the two at Achiet-le-Grand, Nos. 45 and 49, were to withdraw to Grevillers in case of necessity, as, owing to their proximity to an important railway junction, they were likely to come under heavy shell fire. An alternative ambulance train siding for patients from the casualty clearing stations at Achiet-le-Grand was also being prepared at Miraumont, in the event of ambulance trains being prevented by hostile fire from coming up to Achiet-le-Grand. All these positions were within ten or twelve miles of the front line, except Edgehill, which was some twenty-three miles back. Schemes, however, were drawn up for their retirement. The D.M.S. of the Third Army regarded his first line of casualty clearing stations as those at Beaulencourt, Grevillers and Achiet-le-Grand, his second line as Edgehill, to which the casualty clearing stations at Beaulencourt would retire, and Aveluy, for those withdrawn from Achiet-le-Grand and Grevillers. Le Bac du Sud and Agnez-les-Duisans were also regarded as second line positions, although somewhat far forward. His third line consisted of the stationary hospitals at Doullens, Frévent and St. Pol. Although, therefore, in the distribution of casualty clearing stations too many were in a forward area, complete schemes were ready for their withdrawal in the event of a retirement.

The D.M.S. of the Third Army appears to have had some anxiety regarding the group of casualty clearing stations at Agnez-les-Duisans as a second line group, and each of the three casualty clearing stations there had been instructed to prepare in minute detail measures for falling back rapidly either on Aubigny or St. Pol. Indeed all the casualty clearing stations of the Third Army had prepared detailed schemes for withdrawal to the third line at Doullens, Frévent or St. Pol.

The First Army.—The First Army casualty clearing stations in March 1918, were at Ruitz, Nos. 1 and 4 Canadian, Nos. 6 and 15; Chocques, No. 1; Bruay, No. 22; Lapugnoy, No. 18; Lozinghem, No. 23; Merville, Nos. 51 and 54; St. Aubin,

Nos. 30 and 57; Lillers, No. 58; Haverskerque, No. 33; Aubigny, No. 42. Those at St. Aubin were clearly too far forward and the D.M.S. of the Army was instructed by the D.G.M.S. to move them back. Consequently No. 57 had already been brought back to Aubigny by the 18th March.

The Fourth Army.—Those of the Fourth Army were at Oultersteene, No. 2, No. 1 Australian and No. 2 Australian, the last having been brought back from Trois Arbres on the 15th March; Dozinghem, No. 4; Remy Siding, Nos. 10, 17, 2 Canadian and 3 Canadian; Godewaersvelde, No. 11; Arneke, No. 13; Ebblinghem, No. 15; Rousbrugge, No. 36 from the Dunkirk area; Nine Elms, No. 44 and No. 3 Australian; Bandaghem, Nos. 62 and 63.

The sketch map shows the relative positions of the casualty clearing stations to the front line. The interrupted line on the map indicates the limit of what the D.G.M.S. considered to be the forward zone beyond which casualty clearing stations should not be placed in a situation of defence in view of the possibility of the line being forced back.

Divisional and corps medical arrangements were generally the same as during the periods of trench warfare and the battles of 1917, but with elaborate arrangements for corps rest stations and scabies centres in back areas and for treating gas casualties in front areas.

Schemes had been prepared for advanced and main dressing stations to fall back to new positions in the event of a retirement, the general arrangement being for the advanced dressing stations to fall back on main dressing station positions and the latter on casualty clearing station positions, but, as will be seen, in the case of the Fifth Army the policy was to eliminate main dressing stations and evacuate direct from advanced dressing stations to casualty clearing stations.

Outline of the operations.

This then was the medical situation prior to the German offensive. The attack was opened on the 21st March, shortly before 5 a.m., by "a bombardment of great intensity, with gas and high explosive shells from all natures of artillery and trench mortars."* It was launched against the whole of the Third and Fifth Army fronts, "while road centres and railways as far back as St. Pol were engaged by high velocity guns." Other fronts were also subjected to bombardments and to gas

* Sir D. Haig's despatches, p. 186.

attacks, but the chief offensive was confined to the front between the Sensée, south of Arras, and the Oise.

The Fifth Army front on the British right was held by the IIIrd, XVIIIth, XIXth and VIIth Corps, with the Cavalry Corps in reserve. Their respective D.Ds.M.S. were Colonels S. Macdonald, H. V. Prynne, H. I. Pocock, E. W. Slayter and F. J. Morgan.

The divisions in line with their A.Ds.M.S., were from right to left as follows :—

IIIrd Corps	58th Division	Colonel J. W. H. Houghton, A.D.M.S.
	18th ,,	Colonel J. Poe, A.D.M.S.
	14th ,,	Colonel J. H. Campbell, A.D.M.S.
XVIIIth Corps	36th Division	Colonel H. S. Roch, A.D.M.S.
	30th ,,	Colonel J. D. Alexander, A.D.M.S.
	61st ,,	Colonel C. H. Howkins, A.D.M.S.
XIXth Corps	24th Division	Colonel F. R. Buswell, A.D.M.S.
	66th ,,	Colonel J. Mackinnon, A.D.M.S.
VIIth Corps	16th Division	Colonel A. W. N. Bowen, A.D.M.S.
	21st ,,	Colonel C. W. Profeit, A.D.M.S.
	9th ,,	Colonel O. W. A. Elsner, A.D.M.S.

In reserve were the 2nd, 3rd and 1st Cavalry Divisions, with Colonels A. H. Safford, J. Powell and T. C. Mackenzie as their A.Ds.M.S., at Guiscard, Athies and Peronne respectively ; the 20th Division, Colonel B. F. Wingate, A.D.M.S. ; 50th Division, Colonel A. Milne-Thompson, A.D.M.S. ; and the 39th Division, Colonel G. W. Brazier-Creagh, A.D.M.S.

The Third Army front was held by the Vth, IVth, VIth and XVIIth Corps, whose respective D.Ds.M.S. were Colonels O'Callaghan, Pollock, Hinge and Bray.

Ten divisions in line on the Third Army front were the 47th, 63rd and 17th of the Vth Corps, the 51st and 6th of the

IVth Corps, the 59th, 34th and 3rd of the VIth Corps, and the 15th and 4th of the XVIIth Corps. The 56th Division of the XIIIth Corps of the First Army was on the left of the 4th Division; and the 2nd, 19th, 25th and Guards Divisions were in close reserve, with the 41st Division from Italy and the 40th Division further back, and the 31st Division marching south to the Third Army area from Frevillers in the XIIIth Corps area.

Between the 21st and 23rd March, the Fifth Army front had retired from its battle zone, after severe fighting, to a line running from the Oise at Viry-Noreuil northwards to the Somme Canal, west of Ham, then along the Canal to west of Peronne and thence north of the Somme to the east of Sailly-Sallisel.

The Third Army had retired at the same time to a line running from the Fifth Army left to the east of Ytres and thence roughly in a north-easterly direction, west of St. Leger, to Boyelles, from which point it ran east of Arras to Fampoux on the Scarpe.

In the earliest phases of the attack, therefore, the positions of the casualty clearing stations at Cugny, Ham, Peronne la Chapellette, Ytres and Boisleux-au-Mont, were either in the enemy's hands or in the front line of battle.

On the 24th March, the Third Army line retired to a new line running from Boyelles southwards, west of Bapaume through Longueval to the Somme between Curlu and Clery. The Fifth Army line followed the Somme from there to the east of Marchelepot, but from that point southwards the line ran considerably west of the Somme, which the enemy had crossed at Ham and elsewhere, to the Oise between Chauny and Abbecourt. The part of the line from the Oise to a point about five miles south of Nesle was taken over by the French troops at this time, and the IIIrd Corps, which occupied the sector previously, came under the command of the French.

On the 25th March, the line of the Somme south of Peronne was abandoned, and the casualty clearing station positions at Noyon and Marchelepot, and at Peronne la Chapellette fell into the hands of the enemy. North of the Somme the enemy pushed a salient into the Third Army line along the Ancre Valley from Achiet-le-Grand to Beaucourt-sur-Ancre and thence through Thiepval, Contalmaison and Montauban to Curlu on the Somme. Consequently Achiet-le-Grand and Grevillers no longer existed as casualty clearing station positions.

The retirement was continued on the 26th March by the Third Army, which straightened its line to positions along the Ancre to Albert and Dernancourt and thence south to

the Somme opposite Chipilly, while the Fifth Army continued to hold the south bank of the Somme to a point opposite Bray. Its line from there ran south through Rozières to some four miles west of Roye. The French line ran thence south-east to the Oise west of Noyon. By this retirement all the original casualty clearing station positions of the Third and Fifth Armies were in the front line or in the enemy's hands, with the exception of Agnez-les-Duisans.

From the 26th March until the 5th April, when the German offensive against the Third and Fifth Armies ceased, the Third Army line remained practically unchanged, except that it was withdrawn west of Albert and Dernancourt and ran to the Somme at Sailly-le-Sec, the VIIth Corps operating north of the Somme being transferred to it from the Fifth Army. The Fifth Army was compelled to withdraw on the Somme to the point at which the Third Army line had stabilized on the north bank, but its line formed a salient from there to Rozières and Arvillers, where it joined the French line, now withdrawn to the west of Montdidier. The line from there ran eastwards to the south bank of the Oise as far as the original position south of La Fère.

On the 28th March the Rozières salient was abandoned and the line of the Fifth Army then ran from Hamel through Marcelcave and Ignacourt to Mezières, whence it was continued by the French to the line of the Avre.

On the 29th and 31st March, the British line south of the Somme was shortened, and did not extend farther south than Hangard on the Luce. The French line was then withdrawn to the west of the Avre from Moreuil and Morisel through Grisvesnes to Ayencourt. Finally, by the 5th April, the British line south of the Somme was brought somewhat farther back to the west of Hamel and east of Villers Bretonneux, joining the French line at Hangard.

From the afternoon of the 28th March the Fifth Army between the Somme and the Luce was taken over by General Sir H. Rawlinson, a reserve army under General Gough being formed for the construction of a new line of defences behind the armies engaged. On the 2nd April the Fifth Army was re-formed as the Fourth Army, Major-General B. M. Skinner carrying on the duties of D.M.S., until the 8th April, when Major-General O'Keeffe rejoined it from the Second Army as D.M.S. Major-General Guise Moores then succeeded Major-General O'Keeffe as D.M.S. of the Second Army.

The medical situation during the offensive against the British is recorded in the following chapters.

CHAPTER XIII.

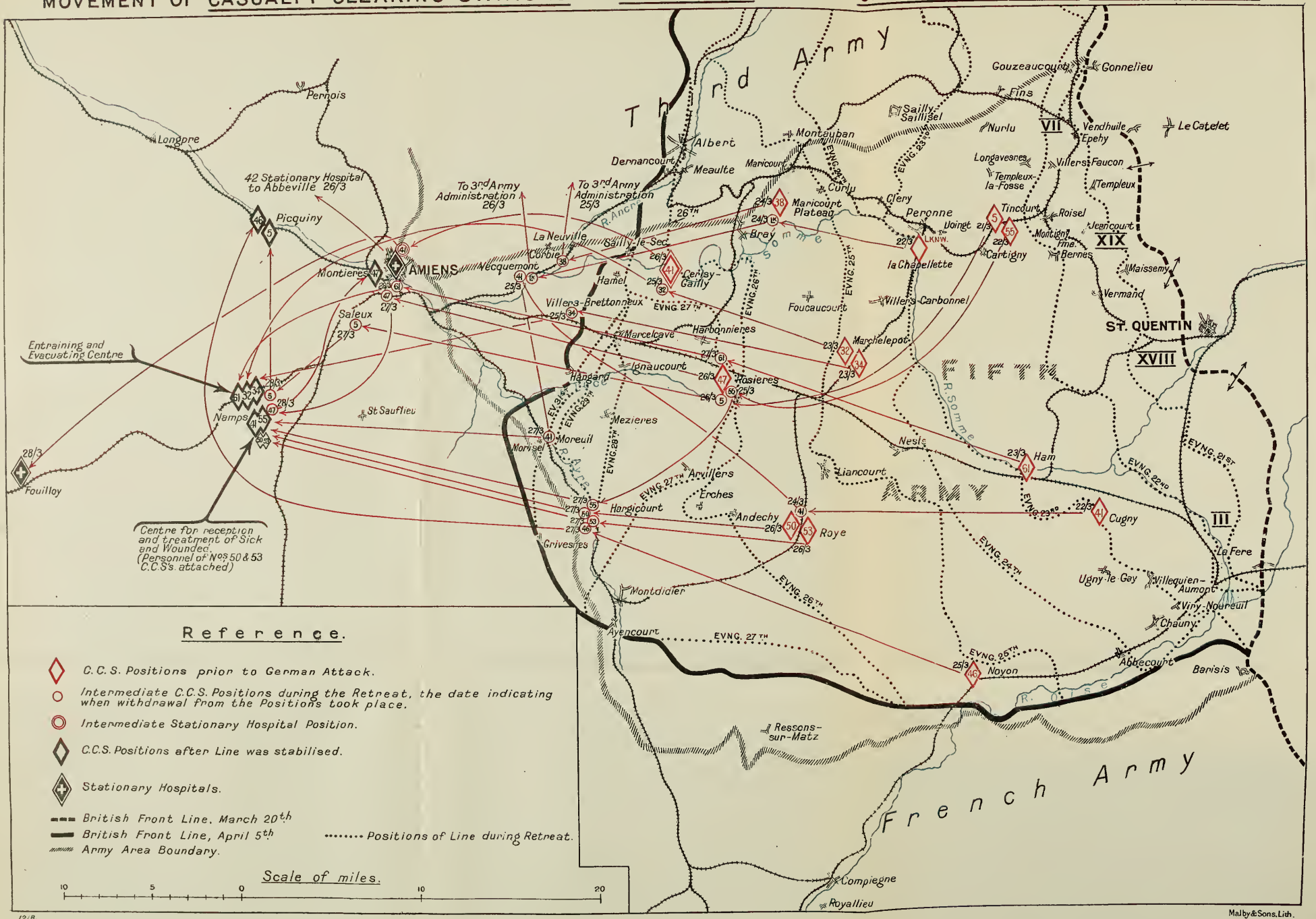
THE GERMAN OFFENSIVE AGAINST THE FIFTH ARMY IN 1918.

IN the preliminary arrangements for the defence of the Fifth Army front, the possibility of the line being driven back beyond the sites of the casualty clearing stations does not appear to have been fully realized. In fact the D.M.S. displayed a tendency to prepare as much for an advance as for a retreat. He was apparently reluctant to abandon the extensive surgical work which had been practised so successfully by his casualty clearing stations in the battles of Ypres in 1917. Obviously, however, such work would be impossible during a retreat, at any rate in forward C.C.Ss., as was indicated in the D.G.M.S. instructions of 6th March 1918.

On the 26th February the D.M.S. of the Fifth Army had issued a series of instructions for medical arrangements in the event of an advance or a retirement, and had asked the D.A. & Q.M.G. of the Army if he could be provided in an emergency with one hundred lorries to move a casualty clearing station from Tincourt in one day, thus showing that there was no intention to move from this dangerously advanced position except at the last moment, and at a time when a move of the nature contemplated would be fraught with difficulty. Again, on the 28th February, he ordered the casualty clearing stations at Tincourt to indent for more hospital marquees in order to increase their accommodation, thus adding to the bulk of equipment that would require removal.

On the 2nd March, at a conference of Ds.M.S. of Armies held at the D.G.M.S. office by the D.D.G., the D.M.S. of the Fifth Army was warned that his casualty clearing stations might be lost in the event of a sudden attack, but he then expressed a hope that he would get them away complete in good time, as he had asked for trains to be ready to remove the units as soon as danger was foreseen. Here, again, the mistake was being made of waiting until the actual danger occurred to bring back casualty clearing stations in dangerously forward positions, and then arranging not for a mobile section to be moved, such as would require only eight or nine lorries and would be capable of being got ready for work immediately

MOVEMENT OF CASUALTY CLEARING STATIONS OF FIFTH ARMY DURING GERMAN OFFENSIVE, SPRING OF 1918.



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in a new site, but for the whole bulky unit to be moved back at one time, requiring a complete train or a hundred or more lorries, both uncertain transport during a sudden retirement. Further, when No. 38 C.C.S. from Italy was being brought into the Fifth Army area, the site suggested for it by the staff of the Army on the 12th March was Bray, but to this the D.M.S. objected as being too far back. It was consequently sent instead to Maricourt Plateau.

As might have been expected such arrangements were bound to lead to much loss of equipment, with resulting inadequate arrangements in back areas, in the event of a retreat ; and this was what actually happened. Fortunately, however, all the wounded, and they numbered many thousands, who were brought back to the casualty clearing stations, were evacuated and the personnel also got away before the units were captured by the enemy.

The Casualty Clearing Stations.

The functions and accommodation of the casualty clearing stations of the Fifth Army as detailed by the D.M.S. of the Army, before the German attack, are shown in the following table.

Medical Units.	Area.	Accommodation for wounded.
Gailly.		
No. 41 Stationary Hospital.	*All sick* from Proyart and Boves areas north of Amiens road and from Bray area. *Infectious* from Bray, Proyart and Boves areas. *N.Y.D.N.* .. .. *Self-inflicted wounds* .. .. .. *Ear, Throat and Nose* special cases ..	1,000
Tincourt.		
Nos. 5 & 55 C.C.Ss. No. 5 C.C.S. .. No. 55 C.C.S. ..	*All battle casualties* from VIIth and XIXth Corps. *Acute and urgent medical cases* (excluding Infectious) from VIIth and XIXth Corps areas. *Gassed cases* of VIIth and XIXth Corps.	2,000
La Chapelette.		
Lucknow C.C.S. ..	*All Indians*—sick and wounded	600

Medical Units.	Area.	Accommodation for wounded.
Marchelepot.		
Nos. 32 & 34 C.C.Ss.	*All sick* from Training Area, north of Warvillers—Freniches line, and sitting sick from XIXth and VIIth Corps front areas.	2,000
No. 32 C.C.S ..	*Dysentery and Dysenteric Diarrhoea* ..	
No. 34 C.C.S. ..	*Eye Centre*	
	Dental Centre	
	Infectious from areas east of Bray and Proyart areas and south of Proyart area.	
	Injuries to Skull from front as far south as Holnon.	
Ham.		
No. 61 C.C.S. ..	*All battle casualties and sick* from XVIIIth Corps north of St. Quentin-Somme Canals and from Ercheu area, east of Somme-Noyon Canal.	1,000
Cugny.		
No. 41 C.C.S. ..	*All battle casualties and sick* from XVIIIth Corps south of St. Quentin Canal to Tugny, and thence to Dury, Sommette, Bronchy and Le Plessis inclusive, and IIIrd Corps north of line Berlancourt - La Neuville - Liez - Vendeuil inclusive.	1,000
	Gassed cases from IIIrd and XVIIIth Corps.	
Noyon.		
No. 46 C.C.S. and Advanced Operating Centre at Abbecourt.	*All battle casualties and sick* south of Vendeuil-Liez-La Neuville-Berlancourt and Southern boundary of Ercheu area; also from Guiscard and Noyon areas.	1,200
	Abdominal injuries from this area to advanced operating centre, Abbecourt.	
Roye.		
Nos. 50 & 53 C.C.Ss.	*All sick* from Rollot, Montdidier, Training Area south of line Warvillers-Freniches (inclusive), Roye-Solente and Ercheu (west of Somme-Noyon Canal) areas.	2,000
Rozières.		
No. 47 C.C.S. ..	*All sick* from Proyart and Boves area south of Amiens road.	1,000

Immediately after the German offensive was launched the two casualty clearing stations at Tincourt were ordered by the D.M.S. to close for admissions at 8 a.m. on the 21st March, but only No. 5 was ordered to strike tents and pack equipment at once and prepare to move. The officer commanding No. 55 C.C.S., however, decided to do so without waiting for orders, and by noon all the patients, except one unfit to be moved, were evacuated by ambulance train. The nursing sisters of both units and the surgical teams of No. 5 were sent to work in Nos. 32 and 34 C.C.Ss. at Marchelepot, the same afternoon, while the surgical teams of No. 55 went to No. 61 C.C.S. at Ham. The equipment of No. 5 was loaded on goods trains during the evening and was taken to Rozières, where it commenced to open the following morning. The equipment of No. 55 was hurriedly loaded on a train during the night and all but a small amount was saved and brought to Rozières, where the unit was established alongside No. 5. However, before the camps were ready to receive wounded at Rozières, all work was stopped there on the 24th March. The personnel of No. 5 was then ordered to proceed to No. 42 Stationary Hospital, Amiens, on the 26th March, to Namps on the 27th, and to Picquigny the same afternoon, where it opened in buildings, obtaining drugs, dressings and equipment by local purchase. The surgical teams of No. 55 C.C.S. rejoined their unit at Rozières during the night of the 22nd/23rd, having left Ham hurriedly on foot without their kits or operation-room equipment. Some of the stores of the unit were loaded on trucks on the evening of the 24th March, and on the following day a site was selected at Hargicourt as an entraining centre for wounded. The stores of No. 55 C.C.S. arrived there at 5 p.m., and two hours afterwards wounded began to arrive in large numbers from the Roye group of casualty clearing stations. At 8 p.m. the nursing sisters also arrived from Roye. The unit was now out of touch with the D.M.S. and the commanding officer sent several of the nursing sisters to No. 42 Stationary Hospital, Amiens. By 4 p.m., on the 26th March the remainder of the stores and personnel arrived at Hargicourt from Rozières, and ambulance trains came up during the afternoon. At 1 a.m. of the 27th March orders reached the unit from the D.M.S. to move to Namps. All the wounded were cleared by 9 a.m. in ambulance trains and the bulk of the stores were taken to Namps by lorries. During its stay at Hargicourt, 1,352 sick and wounded were admitted to No. 55 C.C.S. On its arrival at Namps it opened alongside

No. 41, which had already arrived there from Cugny. Orders were given to it to pack up and be ready to move by 10 a.m. on 30th March, but it remained parked at Namps till the 4th April, when it was moved to Longpré.

No. 61 C.C.S. was ordered out of Ham at 3 p.m. on the 22nd March. All patients were evacuated by 1 a.m. on the 23rd and the personnel proceeded to Rozières, and assisted in the work of No. 47 C.C.S. there. It was only by the personal efforts of the D.A.D.R.T., who arrived for the purpose of evacuating the railhead at Ham at 4 o'clock in the afternoon of the 22nd March, that No. 6 Ambulance Train was brought up and loaded with the assistance of fifty or sixty men of No. 28 Area Employment Company. Owing to the line being cut, it was not possible to bring the train to the ambulance train siding, and the patients had to be carried to a point on the line about a quarter of a mile farther back. The wounded were eventually entrained and evacuated under enemy artillery fire. The equipment and stores were abandoned. On the 27th March the personnel was attached to No. 42 Stationary Hospital, Amiens, and on the following day went to Namps and formed an entraining centre there. The commanding officer Lieut.-Colonel C. H. Turner, had been sent to Villers Bretonneux and was in charge of an entraining centre at the railway station there between the 23rd and 27th March; on rejoining his unit, he was put in charge of the entraining centre at Namps.

Orders to close No. 41 C.C.S. at Cugny were received at 6.50 a.m. of the 21st March. All patients were to be evacuated by ambulance train about 11 a.m., but the line was cut, and they were consequently sent by car and lorry to No. 61 C.C.S. at Ham, to which also the nursing sisters and surgical teams were sent by orders of the D.M.S. At 5.45 p.m. orders to move to Roye arrived. Lorries were kept busy removing stores to Roye all night, but at 10.45 a.m., the enemy being within three miles of the unit, the personnel were sent off by road and the remaining equipment abandoned. Although attempts were made to salve some of it the lorries were unable to get beyond Ham. At Roye the personnel was distributed to the casualty clearing stations there, and also to the entraining centre at Villers Bretonneux. On the 24th March the unit was ordered to Vecquemont, but the stores had been sent to Moreuil, where schools were taken over and equipped. Such stores as had been taken to Vecquemont were also brought back to Moreuil on the night of the 25th/26th. On the 27th the unit was moved to Namps,

dumping part of the stores midway between that place and Moreuil. It remained at Namps till the 22nd April, receiving and treating most of the casualties brought there. Between the 27th March and 2nd April the records of the unit give the following statistics :—

Date.	Admitted.	Evacuated.	Died.	Remaining.
27th March	2,080	440 by road	8	1,920
28th ,, ...	1,332	2,323	29	429
29th ,, ...	2,791	1,464	25	735
30th ,, ...	2,641	2,681	38	
31st ,, ...	1,780	2,054	35	65
1st April	1,212	1,014	30	168
2nd ,, ...	502	584	—	55

The Lucknow C.C.S. commenced to move from Peronne la Chapellette to Maricourt Plateau on the 22nd March. At first only one section was ordered there, but at 11 p.m. the second section was ordered to move by the D.M.S. There were only two lorries available for transport, and as it took six hours to do one return journey it was calculated that twenty-four hours would be required to move a section. At 1.30 p.m. on the 23rd March machine guns came into action near the hospital, and at 2 p.m. the commanding officer and the remainder of the personnel set off across country, reaching Maricourt about 8 p.m. Lorries returned about 2.30 p.m. but came under heavy fire and two drivers were wounded. The equipment still left at Peronne la Chapellette was consequently abandoned. From this time the unit was guided in its work chiefly by the officer commanding No. 38 C.C.S., who informed it at 3 a.m. on the 24th March that the enemy was approaching. An officer was despatched to obtain instructions from the D.M.S. As communication with the D.M.S. appeared hopeless the officer commanding retired with his personnel to Corbie. After reaching Corbie he reported his arrival to the D.M.S. and was placed under arrest for leaving Maricourt without orders and before clearing his patients.* A party from the British personnel of the unit then returned to Maricourt and with the aid of a few cars of No. 10 M.A.C. completed evacuation of the patients, who were taken to Villers Bretonneux by 3 a.m. of the 25th March. The unit was then ordered to Vecquemont, but failed to salve all the equipment

* He was subsequently released.

left at Maricourt. It then came under orders of the D.M.S., Third Army, and was moved to Pont Remy near Abbeville on the 29th March.

No. 38 C.C.S. detrained at Maricourt Plateau from Italy on the 19th March, and commenced to open at once. Accommodation for 400 was ready on the 21st and 17 nursing sisters were sent to it on the 22nd. It received 1,105 wounded on the 22nd, 1,204 on the 23rd and 73 on the 24th, evacuating all by ambulance trains or temporary ambulance train except 10 moribund cases, before it received orders on the 24th to close and move to La Neuville near Corbie, where it opened under the command of the D.M.S., Third Army, the following day. Forty lorry loads of stores were got away during the 24th and night of the 24th/25th March, but about half the tentage had to be abandoned.

After Tincourt, Ham and Cugny had been abandoned, Marchelepot, Noyon and Roye became the chief centres to which wounded were sent during the first three days of the battle, more especially Marchelepot, to which all the surgical teams from the lines of communication, ten in number, had been brought by the D.M.S. Arrangements for taking the teams over at No. 42 Stationary Hospital, Amiens, and distributing them on their arrival there in cars of the Army had not been made according to the instructions issued by the D.G.M.S. on the 6th March.* Consequently they were kept at Amiens during the whole of the day of the 21st March, having arrived there in cars driven by women drivers from the bases. Operative surgery, however, had to be reduced to a minimum at Marchelepot, as both of the casualty clearing stations, Nos. 32 and 34, were crowded with wounded, who had to be got ready for immediate evacuation, and the personnel had to devote their whole attention to this. The O.C. of No. 32 C.C.S. left Marchelepot on the 23rd March, on his own initiative, with his personnel and 96 patients owing to the heavy shelling in the neighbourhood, the cutting of the railway communications, and the possibility of heavy fighting in the vicinity. He handed over his patients to No. 41 Stationary Hospital at Gailly and was ordered to Namps by the D.M.S.

* The D.M.S. of the Fifth Army informed the D.G.M.S. office by telephone on the morning of the 21st March that the teams would be sent to the C.C.Ss. by the cars in which they would arrive from the base, but, as the drivers of these cars were women, who did not know the roads and whom the D.G.M.S. expressly wished to go no farther forward than Amiens, the teams were detained at Amiens until suitable arrangements for distributing them to the C.C.Ss. had been made by the Army D.M.S.

on the 25th March. The stores and equipment at Marchelepot were abandoned. No. 34 C.C.S. remained until the last of the wounded had been evacuated by ambulance train, temporary ambulance train and car and then hurriedly departed in a temporary train at 9.45 p.m. on the 23rd March, with only a small quantity of operating room equipment, the army ophthalmic centre equipment, and the office records. The remaining stores were abandoned. The personnel and such stores as had been saved were ordered to the entraining centre at Villers Bretonneux. The unit was sent on to Namps on the 25th March.

The D.M.S. of the Army was not satisfied with the casualty clearing stations leaving Marchelepot without orders from him, but there was lack of communication and the railway staff feared that the line would be broken and no further trains possible. Between 5,000 and 6,000 wounded passed through the two casualty clearing stations there on the 21st, 22nd and 23rd March, and all were got away before the enemy arrived.

After Marchelepot was abandoned, wounded were directed to Rozières, where No. 47 C.C.S. was established, reinforced by the personnel of Nos. 5 and 55 C.C.Ss. from Tincourt, nursing sisters of No. 61 C.C.S. from Ham, and surgical teams from various units. Wounded began to arrive at Rozières at 8.45 a.m. of the 22nd March and continued arriving in a steady stream till the 26th, when orders came for the C.C.S. to retire. The wounded were then sent to No. 41 Stationary Hospital, Gailly, and to the entraining centre at Villers Bretonneux. Some twenty of the patients had to be carried at the last moment by hand as far as Harbonnières. All the operating instruments and surgical team equipment were saved and taken to Amiens, but the remainder of the stores was abandoned. On the 27th March No. 47 C.C.S. went to Namps.

The casualty clearing stations in the southern sector, No. 46 at Noyon, and Nos. 50 and 53 at Roye, were cut off for some time from telephone communication with the D.M.S. Consequently the D.D.M.S. of the IIIrd Corps gave instructions for Noyon to be cleared on the 24th March, but a message reached No. 46 C.C.S. at 10 p.m. from the D.M.S. ordering the unit to remain, as the military situation, so the message said, was much better. However, at 4 a.m. of the 25th another message came through to send the nursing sisters to Amiens. There were then some 1,500 wounded in the casualty clearing station. Several hundred walking wounded broke away from

the unit and followed some lorries which had been placed at the disposal of No. 46 Casualty Clearing Station by the French. By the help of these lorries, twenty-four ambulance cars, two journeys of No. 22 M.A.C. and a train, the whole of the patients were got away on the 25th March to Hargicourt before the Germans arrived. The personnel was ordered to Picquigny on the 27th March, but very little equipment had been salved. The work of this casualty clearing station at Noyon was particularly heavy, over 5,500 wounded being admitted between the 21st and 25th March. At one time, on the 24th March, nearly 3,000 wounded were in the unit. Many had to be accommodated on the ground in the open air, but the weather was fortunately fine and blankets and ground sheets were abundant.

The two casualty clearing stations at Roye remained there until the 26th March, when the place was evacuated under enemy fire and the personnel transferred to Hargicourt. Wounded had been arriving in large numbers owing to the closing of the casualty clearing stations in more advanced positions, but they were all cleared by motor cars, lorries, artillery limbers, and any available transport passing to the rear. Many were also cleared by No. 22 M.A.C. No trains had reached Roye after 4 p.m. on the 25th March. The nursing sisters had been sent to Hargicourt on the night of the 23rd/24th March. They and the rest of the personnel went to Namps on the 27th March. The equipment of the units had been abandoned and the personnel, while at Namps, assisted in the work of No. 41 C.C.S.

During these movements of the casualty clearing stations of the Fifth Army a large entraining centre was established under Lieut.-Colonel Turner, the officer commanding No. 61 C.C.S., at Villers Bretonneux, and another at Roye under Lieut.-Colonel Edwards, commanding No. 41 C.C.S., from the 23rd to the 26th March, when the entraining centres were transferred to Namps and Hargicourt. Namps eventually became the locality at which all the casualty clearing stations with such equipment as had been salved were concentrated, except No. 5 and No. 46, which went to Picquigny on the Somme, between Amiens and Abbeville. The equipment at Namps was pooled and used by No. 41 and No. 55 C.C.Ss. which were opened for the reception and treatment of wounded. The personnel of Nos. 50 and 53 C.C.Ss. was attached for duty in them. No. 61 C.C.S. personnel, assisted by the personnel of Nos. 32 and 34, formed an entraining and

evacuating centre, and the whole of the units in Namps were placed under the direction of Lieut.-Colonel Turner, as Senior Medical Officer.

A subsidiary entraining centre was formed at Montières on the 28th March, and No. 47 C.C.S. was sent there.

No. 4 C.C.S. was transferred complete from Dozinghem in the Ypres area to reinforce the Fifth Army, the D.M.S. allotting it to Vecquemont, but when the area north of the Somme came under the Third Army it was left there in the trucks pending its movement to another site.

No. 41 Stationary Hospital was moved from Gailly to Amiens on the 26th March and took over the buildings and equipment of No. 42 Stationary Hospital. It left Amiens, however, two days later for Fouilloy.

The general position and movement of the casualty clearing stations of the Fifth Army during the German offensive may be followed by reference to the sketch map.

It would appear from this record of the movements of the casualty clearing stations in the Fifth Army that there was no clear indication beforehand of the positions to which they could usefully be withdrawn. In fact during the last week of March the D.M.S. or his staff were engaged in searching for suitable sites, instead of having had them already marked down for successive retirements. But, disregarding these defects in medical strategy, there stands out the one great fact that, owing to the energy and initiative of all ranks, no patient admitted to a casualty clearing station of the Fifth Army was abandoned and all, except those who died before evacuation, were got away.

The mobile laboratories were all moved back during the offensive without loss of equipment, but of the two advanced depôts of medical stores all the stores of No. 13 were abandoned at Ham and most of the stores of No. 14 at Peronne la Chapellette. No. 18 Advanced Depôt was consequently transferred from the Second to the Fifth Army on the 27th March and went to Namps, but was immediately moved back to Fouilloy and then to Longpré.

The Medical Services with Corps.

The medical services of the corps and divisions of the Fifth Army worked smoothly and well, and the retirement of regimental aid posts, advanced and main dressing stations, which successively fell back on one another, appears to have presented no difficulty.

The IIIrd Corps.—The headquarters of the IIIrd Corps were at Ugny-le-Gay on the 21st March with No. 24 M.A.C attached to it. Battle stations had been organized beforehand, and successive zones of withdrawal defined. On the 23rd March the D.D.M.S. (Colonel S. Macdonald) had withdrawn to Noyon, and, as the corps was then retiring in the direction of the French area, he took, on his own initiative, control of the casualty clearing stations at Noyon and Roye. Wounded of the corps were being evacuated from these casualty clearing stations to French hospitals at Compiègne. Colonel Macdonald established a dressing station at Royallieu and made arrangements with the French for the reception of British wounded into their hospitals. Field ambulances were consequently instructed to evacuate the wounded to Royallieu or from the northern sector of the IIIrd Corps to the French hospital at Ressons-sur-Matz. The D.D.M.S. also arranged to draw dressings and drugs from French stores at Creil. Up to the 29th March all wounded of the corps continued to be evacuated through the French hospitals. On that date the D.D.M.S. received instructions to evacuate them, if possible, to Namps. The corps rejoined the Fifth Army on the 30th March leaving, however, the 58th Division with the French. Up to that time many wounded officers and men of the IIIrd Corps were cleared by French ambulance trains and distributed to French hospitals in the interior. They went to all parts of France. The particulars of each admission were sent by the French authorities to the British Military Attaché in Paris, who sent the forms to D.G.M.S. at G.H.Q. Steps were then taken through the D.M.S., L. of C., to have the patients transferred, as soon as their condition permitted, to British hospitals. The French records of each admission were then forwarded to the base record office at Rouen.

There appears to have been no difficulty in the IIIrd Corps in collecting and bringing the wounded during the retreat back to main dressing stations and C.C.Ss., and there is no record of a breakdown at any time. The policy of the D.D.M.S. was to distribute the cars of No. 24 M.A.C. to divisions, retaining a minimum reserve of twelve cars at the headquarters of the convoy under his own control.

Arrangements were also made for a medical lorry park being formed of twenty-two lorries at Villequier Aumont, whence they were to be distributed under orders of the D.D.M.S. by the O.C. of No. 24 M.A.C. Some of these lorries were to be distributed to the walking wounded collecting

stations of the divisions for clearing the walking wounded to the corps rest station or to the casualty clearing station at Noyon. The O.C. of the medical lorry park was to be responsible for ensuring an adequate supply of lorries for rapid and smooth evacuation.

Much of the success of the medical work of the corps appears to have been due to the D.D.M.S. having this medical lorry park placed at his disposal. The total number of lorries allotted to him was thirty, two each being sent, on the receipt of the orders to prepare for attack, to each of the four walking wounded collecting stations, while the remaining twenty-two were parked, as already noted, at the headquarters of the medical lorry park.

Strong points in the battle zone were supplied with medical emergency boxes, which were not to be used except in the case of attack. They contained shell and field dressings, splints, bandages, cookers, with a certain amount of medical comforts, stretchers and Thomas' splints, and anti-tetanic serum. They were to be held as trench stores. Wounded were to be cleared from these strong points by the bearers detailed from field ambulances whenever the situation permitted, but on no account was the garrison allowed to be depleted for bringing them back.

Between the 21st and 25th March there were many casualties in the R.A.M.C. of the corps, as shown in the following table :—

Casualties in the R.A.M.C. of the IIIrd Corps.

Division.	Killed.		Wounded.		Missing.		Gassed.		Total.
	Offs.	O.R.	Offs.	O.R.	Offs.	O.R.	Offs.	O.R.	
14th Div.	1	9	1	22	1	57	—	—	91
18th Div.	—	—	1	—	4	22	—	—	27
58th Div.	—	1	—	3	—	—	—	9	13
Total ..	1	10	2	25	5	79	—	9	131

The XVIIIth Corps.—The XVIIIth Corps, which retired on the left of the IIIrd Corps from Ham through Nesle to Moreuil between the 22nd and 25th March, and to St. Sauflieu on the 27th March, eventually handed over all its divisions to the XIXth Corps on the 29th March, and on the 2nd April was withdrawn from the battle front. The evacuation of its sick and wounded also worked smoothly and well. Field

ambulance transport, No. 31 M.A.C., and motor lorries conveyed them in the direction of Noyon, Roye and eventually Hargicourt and Namps. In accordance with the instructions of the D.M.S. the advanced dressing stations were to be evacuated direct to the casualty clearing stations, and the D.D.M.S. of the corps consequently arranged for No. 31 M.A.C.

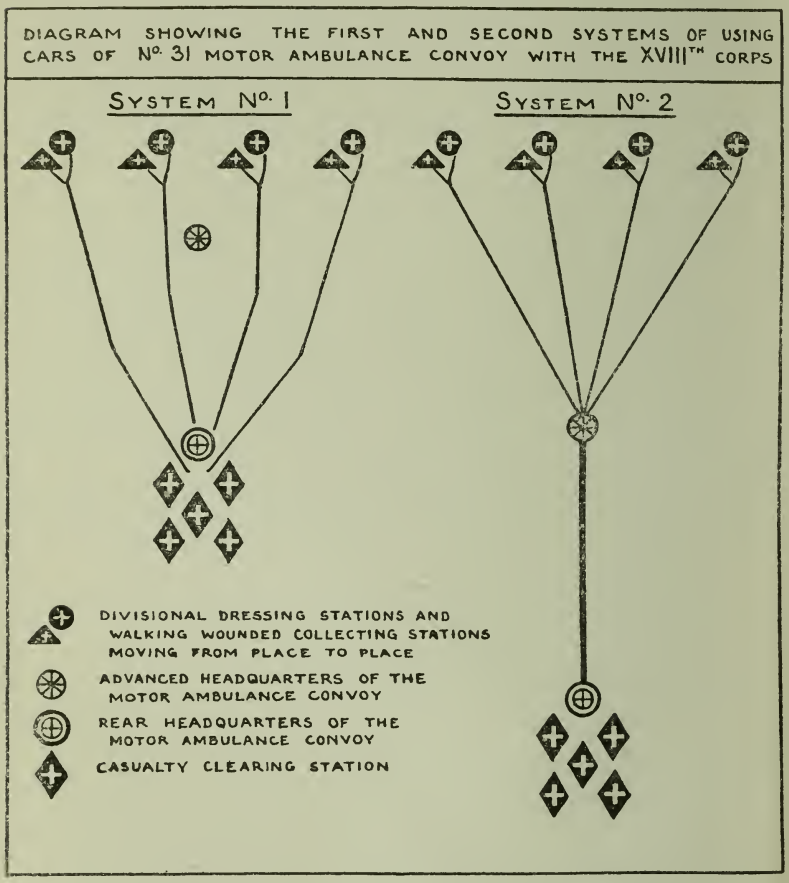


DIAGRAM SHOWING THE FIRST AND SECOND SYSTEMS OF USING CARS OF Nº. 31 MOTOR AMBULANCE CONVOY WITH THE XVIIIᵀᴴ CORPS
SYSTEM Nº. 1
SYSTEM Nº. 2
DIVISIONAL DRESSING STATIONS AND WALKING WOUNDED COLLECTING STATIONS MOVING FROM PLACE TO PLACE
ADVANCED HEADQUARTERS OF THE MOTOR AMBULANCE CONVOY
REAR HEADQUARTERS OF THE MOTOR AMBULANCE CONVOY
CASUALTY CLEARING STATION

to be reinforced by five of the motor cars of each division in the line and all but the Ford cars of the division in reserve. This worked well during the first day of the battle, but there was great difficulty afterwards in maintaining communication with the A.Ds.M.S. of divisions. The D.D.M.S. then reversed his policy, and on the 23rd March placed five motor ambulance cars of No. 31 M.A.C. and four motor lorries, each seating

twenty-five walking wounded, at the disposal of each A.D.M.S., leaving a reserve of cars and lorries with No. 31 M.A.C. to be sent out on request. These arrangements worked well, and when the casualty clearing stations were concentrated at Namps, a system of clearing the advanced dressing stations by relays was adopted. The motor ambulance convoy had a rear and advanced post ; when a loaded car went back an empty car was at once sent forward from the advanced post, and in order to make this system more effective the advanced post was established at a relay point, through which all cars coming back with wounded from the dressing stations passed on their way to the casualty clearing stations, as shown in the diagram of the earlier and later systems on the previous page.

There is no record of the losses amongst the R.A.M.C. in this corps, and the records of the wounded admitted to its medical units are not complete, but the following table shows such figures as were noted at the time :—

Summary of wounded admitted to medical units of XVIIIth Corps during the period 12 *noon* 21*st March* 1918 *to noon* 31*st March* 1918.

Date.	Officers.	Other ranks.
March 1918.		
21st to 22nd	35	789
22nd to 23rd	15	151
23rd to 24th	10	89
24th to 25th	22	253
25th to 26th	6	80
26th to 27th	14	236
27th to 28th	26	583
28th to 29th	20	225
29th to 30th	6	191
30th to 31st	47	683
Totals	201	3,280

The XIXth Corps.—The headquarters of the XIXth Corps were at Villers Carbonnel, south of Peronne and west of the Somme Canal on the 21st March. The medical arrangements made by its D.D.M.S. were similar to those of the XVIIIth Corps, and evacuation of wounded by ambulance cars and lorries worked smoothly. No. 10 M.A.C. was allotted to the corps. The chief point in the medical arrangements issued on the 20th March was in connexion with the use of lorries. Six were to work from Roisel, along the Roisel–Tincourt road,

and as each lorry was capable of making six trips in twenty-four hours, the six lorries could make a total of thirty-six trips, carrying 720 patients in all. Similarly six more lorries were to work from Montigny, capable of making three trips each in twenty-four hours, carrying a total of 360 patients; and twelve lorries to work from Vermand, making three trips each, carrying a total of 720 patients. A total of 1,800 walking wounded could be removed in this way in twenty-four hours.

It was further calculated that the light railway would bring back some 500 patients from Montigny and Roisel to Tincourt in five journeys daily.

The general arrangements in the XIXth Corps were for the casualties to be brought back from the regimental aid posts by hand carriage to the advanced dressing stations, and from the advanced dressing stations direct to casualty clearing stations by means of ambulance cars, light railway and lorries or buses. There were nine regimental aid posts, four on the left sector, two in the centre and three on the right sector.

The field ambulance posts were established at the following places just before the attack:—

Advanced dressing stations:—

Templeux and Roisel for the left sector.
Jeancourt for the centre.
Vermand for the right sector.

Walking wounded collecting posts:—

Templeux and Roisel for the left sector.
Montigny Farm for the centre.
Vermand for the right sector.

Gas Centres on left and right sectors at the A.D.Ss.

Gas Treatment Centre at Bernes.

Corps Rest Station and *Scabies Station* at Doingt.

Evacuation was to Tincourt for lying cases, Marchelepot for walking wounded and head cases, and Gailly for N.Y.D.N. and self-inflicted injuries.

Thirty lorries or buses for twenty sitting cases each were supplied by the XIXth Corps, six, or a total of eighteen, being allotted, as noted above, for collecting from each of the walking wounded posts; one was allotted to the gas centre at Bernes; and the remainder were parked as a corps reserve at Cartigny.

A light railway to Tincourt was to have brought the wounded back to the casualty clearing stations there from the northern sector of the corps; but the closing of these casualty clearing stations immediately after the attack upset the arrangements,

and the wounded had then to be taken by road to Marchelepot, which in its turn was closed for casualties of the XIXth Corps on the first day, Rozières being assigned for their reception after the 21st.

The D.D.M.S. moved back to Foucaucourt on the night of the 22nd/23rd March and on the 24th to Harbonnières. An attempt was made by him to salve the equipment of the casualty clearing stations at Marchelepot on the 24th under orders from the D.M.S. of the Fifth Army, but lorries were refused for this purpose, as the enemy was approaching the place and it was reported to be in flames. On the night of the 24th/25th March the casualty clearing stations at Rozières were closed and wounded of the corps were then sent to Villers Bretonneux, the corps headquarters moving there on the 25th. On arrival at Villers Bretonneux the D.D.M.S. found 3,000 wounded, chiefly walking cases, and endeavoured to expedite the arrival of ambulance trains. Villers Bretonneux and No. 41 Stationary Hospital at Gailly, which was also receiving wounded of the corps, were closed by the D.M.S. of the Army, who instructed the XIXth Corps D.D.M.S. on the morning of the 26th March to send his stretcher cases to Amiens and walking cases to Hargicourt until 8 a.m. of the 27th March, after which time all casualties were to go to Namps.

On the latter date at 11.35 a.m. the D.D.M.S. of the XIXth Corps received a message from the D.M.S. ordering him to make medical arrangements for the force afterwards known as Carey's force, which had been hurriedly formed of convalescents and others to hold a line between Villers Bretonneux and the Somme. The 2/2nd Northumbrian Field Ambulance of the 50th Division was consequently attached to the force. The officer commanding this ambulance sent his wounded to Villers Bretonneux station on the 27th, and had arranged with the Railway Transport Officer there to load them on an empty ammunition train under the charge of a medical officer and some other ranks. Unfortunately this train was sent to the base instead of to Namps. This appears to have been the only instance of wounded being sent back in a supply train to the base during this period. Subsequently the XIXth Corps held the line in front of Amiens between the Somme and the Luce, until withdrawn by the middle of April to a back area.

The VIIth Corps.—The VIIth Corps headquarters, which had been at Templeux-la-Fosse, moved back on the night

of the 21st/22nd March to Maricourt and the following day to Corbie. The 39th and 16th Divisions, however, retreated to the south of the Somme and joined the XIXth Corps, while the VIIth Corps was placed under the Third Army. Two Australian divisions joined it at the end of March and it was relieved on the 6th April by the Australian Corps and went to a back area of the Third Army. When the D.D.M.S. came under the Third Army administration he was instructed to send his wounded to the stationary hospitals at Gailly and Amiens, as the casualty clearing stations in the Third Army were all moving at the time and the casualties of the Army were being sent to Doullens.

Twenty lorries had been lent by the Third Army to the corps for clearing walking wounded, but they were taken away on the night of the 31st March without reference to the D.D.M.S. or Corps Headquarters. This upset the whole scheme of evacuation of walking wounded. The D.D.M.S. was able, however, to keep back five of the lorries, and was promised more in the event of active operations again starting. He was much harassed by this interference with his arrangements and at not being able to count on their holding good for more than a day or so at a time.

While the VIIth Corps was in the Fifth Army, forty lorries, together with No. 3 M.A.C., were placed at the disposal of the D.D.M.S. in anticipation of the attack. The lorries were to be distributed as thought necessary by the O.C. of No. 3 M.A.C. Consequently, at the commencement of the operations, the ambulance cars of the convoy were distributed as follows :—

24 ambulance cars to a dressing station at V.18.c., and
20 to a dressing station at Villers Faucon.
2 cars to a W.W.C.P., at Longavesnes.
8 cars to an advanced park at Tincourt.
8 cars to the main park at Peronne.

The forty lorries were placed :—

12 at the W.W.C.P. at V.18.c.
15 at the W.W.C.P. at Longavesnes.
8 parked as a reserve at Nurlu, and 5 at Hamel.

The headquarters of No. 3 M.A.C. were at Peronne.

The Cavalry Corps.—The Cavalry Corps had been reduced to three cavalry divisions before the German offensive of 1918, the Indian units of the 4th and 5th (Indian) Cavalry Divisions having been transferred to Egypt. The corps had held till 9th March the sector subsequently occupied by the

XIXth Corps. Its headquarters were after that date at Villers Bretonneux, with advanced headquarters at Villers Carbonnel. The corps came under the Third Army on the 27th March, but returned to the Fifth Army three days later. Its divisions were employed in various sectors and moved from one corps and one army to another as the situation demanded. The A.Ds.M.S. all complained, in these circumstances, of the difficulty of bringing up personnel and equipment to the scene of action with the horsed vehicles allotted to the cavalry field ambulances. The horses of the ambulance wagons became exhausted after bringing up personnel and were of little use afterwards for evacuating wounded. There is no mention, however, of the motor ambulance transport of these cavalry field ambulances. When the cavalry field ambulances worked in proximity to field ambulances of divisions, their tent divisions or main dressing stations were not wanted, and the A.Ds.M.S. suggested that the equipment of these might well be left behind in order to set free transport for personnel.

The Medical Services of Divisions.

With regard to the medical services of the divisions comprising the corps of the Fifth Army during the retreat details are very incomplete, but from careful reports drawn up by the A.Ds.M.S. of five of the divisions it would appear that it was only during the first two days that it was found difficult or impossible to collect all the wounded. The defence scheme defined three lines of resistance: a line of thinly held outposts, a main battle line of a zone of fortified keeps composed of a chain of mutually supported strong points and a trench line behind, about 3,000 yards from the line of outposts, and a third line of defence about 3,000 yards still further back. Advanced dressing stations were organized in connexion with each of these lines, and the fortified keeps were supplied with dressings, medical comforts, stretchers, blankets, splints and orderlies, but not with medical officers. Many of these keeps were surrounded and captured on the 21st March, and numbers of wounded thus fell into the hands of the enemy. The general schemes prepared by the divisional A.Ds.M.S. were based on the assumption of getting wounded back from the advanced dressing stations to the casualty clearing stations as rapidly as possible, but their calculations were completely upset by the closing of the forward casualty clearing stations, such as

those at Cugny and Tincourt, practically before the enemy attack was launched, thus necessitating a long journey back from advanced dressing stations to the casualty clearing stations in back areas. This was the real defect in the organization, as there were no echelons of main dressing stations prepared for such a contingency.

After the first two days, however, no difficulties seem to have arisen in the Fifth Army divisions, and wounded were systematically collected and taken back, one divisional A.D.M.S. noting that the rate of retirement was sufficiently slow, namely about 1,000 yards in an hour, to admit of this being done. The roads were in good condition up to regimental aid posts, as the latter were falling back on undamaged areas, and the motor ambulance cars were able to go up to them or near them ; but the long carry back to casualty clearing stations without intermediate main dressing stations, and the resulting withdrawal of divisional ambulance transport from the control of divisional A.Ds.M.S. and pooling it with the ambulance transport of motor ambulance convoys caused immense anxiety to many divisional A.Ds.M.S. and field ambulance commanders in their efforts to clear the wounded from advanced dressing stations before the latter were obliged to retire.

On this point the A.D.M.S. of the 66th Division of the XIXth Corps makes the following remarks on the evacuation of dressing stations. His advanced dressing stations were, at the time of the attack, at Templeux and Jeancourt, and withdrew according to plan to successive positions, the distance from the original front line to the final line when the corps was relieved on the night of the 30th/31st March being thirty miles :—

> " All through the whole eleven days, one of the greatest worries and anxieties was the difficulty in getting dressing stations evacuated of casualties before withdrawing from them. From the beginning to the end, there never once was a regular service of ambulances for the purpose of evacuation. It was only as the result of repeated appeals to the D.D.M.S. and to the M.A.C. direct under instructions from the D.D.M.S. that ambulances or lorries were obtained. Sometimes an officer had to go to the M.A.C. in person to ensure the arrival of some ambulances at the dressing station.
>
> " It no doubt happened that vehicles, detailed to report to one dressing station for evacuation, were utilized by other units. It frequently happened that there were two or even three dressing stations, belonging to different divisions, in one village.
>
> " Divisional motor ambulances had to be used to a very considerable extent for evacuating to casualty clearing stations. Owing to the fact that casualty clearing stations had to be closed very early, the journeys to those receiving were very long. In some instances divisional motor

ambulances were absent on one journey eighteen hours. This procedure, wrong in principle, but necessary under the circumstances, involved the risk that it might not have been possible to clear some particular front area of casualties, that being the work for which the divisional motor ambulances should have been held available.

" Also the officer responsible for clearing the front area of casualties was saddled with a constant anxiety that he might not be able to get all his cases away from the dressing station before he had to withdraw from it, at a time when all his energies should have been concentrated on the work of clearing the area in front. That was often a very real anxiety indeed.

" In spite of the difficulties that had to be overcome, as far as is known, every area was cleared of all casualties before the troops withdrew, and in every instance the dressing stations were evacuated of all casualties, before the field ambulance personnel withdrew to another site.

" A feature of the work of clearing casualties from the forward area, in open warfare, is the extensive use that can be made of motor ambulances for that purpose. Shelling was not very heavy after the 21st March, and roads for the most part were undamaged. Motor ambulances, particularly Fords, could be run close up to the front line. The consequence was that hand carries were much shorter than has ever been experienced, even in normal trench warfare.

" Horsed ambulances also were very useful for conveying sitting cases back to the dressing stations.

" The fact that motor ambulances could be used in this way in the forward area made it possible to fix sites well back for dressing stations. That was very desirable in view of the instability of the line, enabling the personnel at the dressing stations to have longer periods of fixity of location."

CHAPTER XIV.

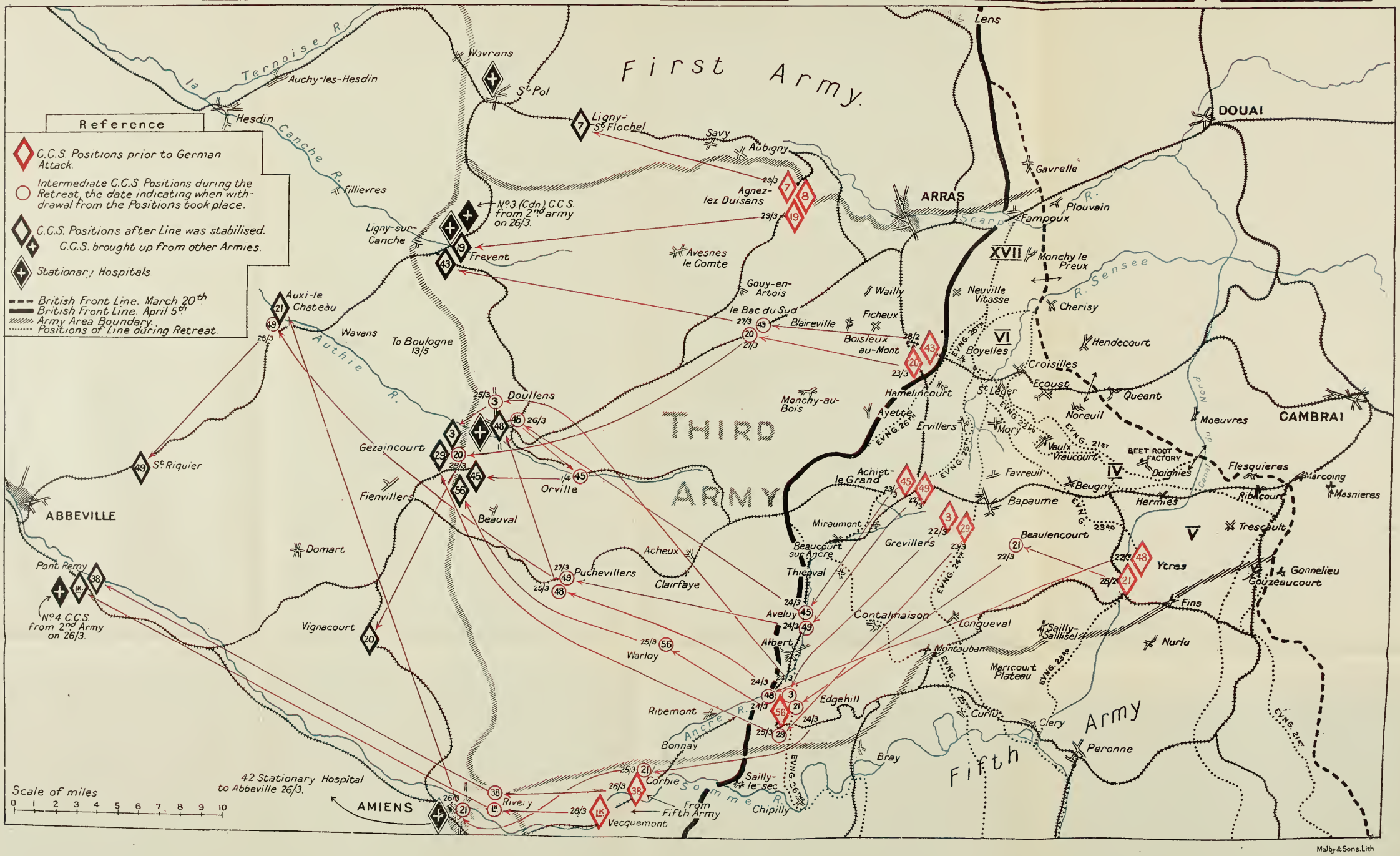
THE GERMAN OFFENSIVE AGAINST THE THIRD ARMY IN 1918.

THE withdrawal of the casualty clearing stations of the Third Army, immediately after the German attack was launched, was more methodical and followed on more clearly defined lines than the withdrawal of these units in the Fifth Army, but became greatly embarrassed by the interruption of traffic on the Albert–Amiens line of railway after the 25th March. The loss of equipment and stores was comparatively small, and only No. 48 and the Lucknow C.C.Ss. had to be sent to the base to refit. The D.M.S. had arranged for nine lorry loads of equipment to be ready in each of the more advanced casualty clearing stations as a mobile section for immediate withdrawal to selected sites further back; but he had also been allotted additional lorries, and was consequently able with them to save more equipment than would otherwise have been possible. The enemy's rapid advance, however, in the southern sectors of the army made it impossible for him to retain the casualty clearing stations in his second line and they had to fall back almost at once on Edgehill. As had been anticipated, Edgehill then became the chief centre at which wounded from the southern sectors were concentrated; but by the 26th March the position there was so dangerous that it too had to be abandoned, and practically all the sick and wounded of the corps engaged were then diverted to Doullens and Gézaincourt. The course of events may best be followed from the movements of the casualty clearing stations.

The Casualty Clearing Stations.

Ytres was the most advanced of the casualty clearing station sites. No. 48 C.C.S. remained open there till the last moment. The site of this casualty clearing station and its vicinity were heavily shelled throughout the 21st March, but it remained open, admitting streams of wounded all day from 6 a.m. onwards. The situation was reported to the D.M.S. at noon, and orders were issued by him to close and move to Edgehill. The sisters were sent away that evening.

MOVEMENT OF CASUALTY CLEARING STATIONS OF THIRD ARMY DURING GERMAN OFFENSIVE, SPRING 1918.



During the night of the 21st/22nd as many of the wounded as possible were evacuated by ambulance train, and the remainder, 267, were cleared to Edgehill by twenty cars sent by orders of the D.M.S. and by nine lorries obtained locally. A train of nineteen trucks arrived at 2 a.m. of the 22nd March, and all but three of the trucks were loaded up when the train was obliged to leave at 2 p.m., only a negligible quantity of stores being abandoned. It reached Edgehill about 6 p.m., where it was unloaded, and No. 48 C.C.S. ordered to open at once for walking wounded.

On the 24th March a party of five medical officers and forty other ranks of No. 48 C.C.S. was ordered to proceed to No. 3 (Canadian) Stationary Hospital, Doullens, with surgical equipment. They went by train to Amiens, and from there marched to Doullens, leaving their equipment at No. 42 Stationary Hospital at Amiens. They reached Doullens during the night of the 26th/27th March. A lorry was then sent to Amiens to bring on the equipment. The remainder of the unit was ordered to entrain for Doullens at 11 p.m. on the 24th, leaving the equipment behind, with the exception of two lorry loads of documents and some other equipment, which were to go on by road to Doullens. The train with the personnel was held up at Bonnay for several hours in a block of trains on the 25th March, and as there seemed little prospect of going on, the O.C. detrained his personnel and marched them to Doullens, where they were employed in No. 3 (Canadian) Stationary Hospital. On the 8th April, the O.C., Quartermaster and twelve other ranks were sent to Boulogne to refit the unit, and the remainder of the personnel rejoined them there on the 13th May. The unit was then again complete. It was transferred to the IXth Corps in the French area and opened at Montigny-sur-Vesle, where, at the end of May during the German offensive on the Aisne, it had again to abandon its equipment and returned to Rouen to refit.

No. 21 C.C.S. had been withdrawn from Ytres before the attack to a new site at Beaulencourt, where its equipment began to arrive at the beginning of March. Most of the personnel, however, were attached for duty to No. 48 C.C.S. The equipment at the time of the attack had been taken on light railway trucks to the new site, but much of it had not been unloaded. The personnel attached to No. 48 C.C.S. rejoined No. 21 C.C.S. early on the 22nd March and the unit then received orders to move from Beaulencourt to Edgehill. Seven lorries

and six ambulance cars arrived to remove unloaded equipment about midday, and the O.C. was able to bring away on them and on his own two lorries seventy-five patients, X-ray outfit, a complete theatre and dressing room outfit, sixty beds and mattresses complete, about 350 stretchers, 1,600 blankets, medical and surgical panniers, dispensary equipment, two large marquees and eight bell tents, thus demonstrating the value of having a mobile equipment, which could be carried on nine lorries, according to the instructions of the D.G.M.S. of September 1916. Edgehill was reached in the evening. The unit did not open at Edgehill, but had orders to stand by, re-equip from the stores kept by the D.M.S. of the Army in a dump at Edgehill and be ready to move. Attempts were made to salve the remainder of the equipment left on the light railway trucks at Beaulencourt. Fourteen lorries were sent off for this purpose on the 24th March, but they were stopped by a countermanding order while on their way, and the unit ordered to entrain with the equipment of No. 29 C.C.S. from Edgehill. For three days it remained on the train, being moved from place to place and eventually reaching Auxi-le-Château on the 26th March. The following day it was unloaded in a field on the Abbeville road and proceeded to open there with a varied assortment of tentage and equipment of its own and of No. 29 C.C.S. It was eventually moved to Wavans, on the Auxi-le-Château-Doullens road as being more convenient for entraining.

Both of the casualty clearing stations at Achiet-le-Grand were open on the 21st March, but were heavily shelled from about 5.30 a.m. till noon. Twenty-five of the personnel belonging or attached to No. 45 C.C.S. were killed and eleven wounded. The casualty clearing stations were ordered to close and move to Aveluy; the sisters and patients being evacuated to Grevillers, as previously arranged. Twenty-five lorries had been placed at the disposal of each of the two units, and by continuous journeys were able to concentrate at Aveluy practically complete by the 23rd March.

No. 45 C.C.S. partially opened at Aveluy for walking wounded. It had salved everything except tent bottoms and a few bell tents in eighty-two lorry loads. Orders were received to stand by, and the equipment was stacked at the railway siding ready to entrain. The unit entrained on the 24th March and left for Doullens about 10 p.m. Its commanding officer, Lieut.-Colonel Fitzgerald, proceeded by car to Doullens, and was appointed to act as a temporary A.D.M.S. there for controlling evacuation by train.

The journey of No. 45 C.C.S. to Doullens was eventful. At Albert the train was heavily bombed, and at Ribecourt it was held up by a block on the line. The personnel was detrained at Meaulte and marched from there to Doullens, two of the officers and fifty other ranks remaining with the equipment on the train. The train arrived at Doullens on the 26th March and went on to Gézaincourt to unload.

The personnel who had marched to Doullens was sent to Orville to inspect a site at the XIIIth Corps signal school. With the exception of officers and other personnel detached for duty with No. 3 (Canadian) Stationary Hospital, Doullens, the personnel remained in camp at Orville till the end of March. On the 1st April the personnel left Orville and took over the officers' hospital in the Château at Gézaincourt. In the meantime, on the 30th March, the equipment and stores, which had been detrained complete at Gézaincourt, were handed over to other casualty clearing stations that had been withdrawn there without their own equipment. On the 7th April the unit was moved to Auchy-les-Hesdin, about three miles north-east of Hesdin in the Ternoise valley.

No. 49 C.C.S. was removed from Achiet-le-Grand in fifty-seven lorry loads to Aveluy, where it was under orders not to open but to entrain. The train was loaded during the night of the 23rd/24th March and left for Puchevillers, which it reached at 7 a.m. on the morning of the 24th. Wounded commenced to come in large numbers in the evening and by midnight about 750 had arrived. Shortly afterwards the site was heavily bombed. A long line of cars which had brought the wounded was hit ; two of the cars were destroyed and others damaged ; three men on them and a R.A.M.C. orderly were killed. The wounded were evacuated by ambulance trains the following day, but the casualty clearing station remained open and admitted many more during the 25th and night of the 25th/26th March. At 10 a.m. of the 26th orders were received to close. Ten ambulance cars were sent for removing patients to Doullens, and 240 were evacuated by them. One hundred walking wounded were marched to Doullens, and an ambulance train, which arrived in the evening, evacuated the remainder. A truck train was loaded with the equipment during the night and left at 8.30 a.m. on the 27th March, only some of the bulky stores such as bedsteads being left behind. During the two days No. 49 C.C.S. was open at Puchevillers it had admitted and cleared 1,550 wounded.

The personnel of No. 49 C.C.S. left Puchevillers for Auxi-le-Château by road. The train with the equipment went to Doullens and did not reach Auxi-le-Château till the 29th March. It was then sent on to St. Riquier, where No. 49 C.C.S. was finally established. By the 8th April the unit was ready to accommodate 500. While it was being opened the medical officers were attached to No. 3 (Canadian) Stationary Hospital for duty. It was transferred at St. Riquier to the Fourth Army on the 22nd April.

The next casualty clearing stations to move were Nos. 29 and 3 at Grevillers. No. 29 was ordered to close in the afternoon of the 21st March and hand over its site to a field ambullance. In the early morning of the 22nd nine lorries were loaded with stores for a 300-bed unit, and the rest of the equipment was placed on an empty ammunition train. The personnel of No. 3 C.C.S. was sent away on this train, being relieved by the personnel of No. 29, apparently because the former had been worn out by the arduous work of dealing with the large numbers of wounded which accumulated at Grevillers after No. 29 had closed, as many as 3,627 wounded and 300 sick having been admitted to it on the 21st and 22nd March. No. 3 C.C.S. was then cleared of all patients. A certain amount of its equipment was left behind and the rest loaded on a second train at Grevillers during the night. Both trains and the personnel of both units arrived at Edgehill early in the morning of the 23rd March, and detrained there.

Consequent on these moves all the casualty clearing stations east of Albert and the Ancre had been withdrawn with comparatively little loss of equipment ; and four of them, Nos. 48, 21, 3 and 29, were at Edgehill alongside No. 56 on the 25th March. Lieut.-Colonel Rae, the O.C. of No. 3 C.C.S., was then appointed by the D.M.S. to act as S.M.O. at Edgehill, and co-ordinate the work. Wounded were coming to Edgehill in large numbers, and Colonel Rae adopted the plan of working the personnel of each unit for a few hours at a time in relief of one another.

There appears, however, to have been some confusion at Edgehill owing to orders and counter-orders. The group of casualty clearing stations was closed down in the morning of the 23rd, but No. 48 was reopened. The O.C. of No. 29 was ordered to entrain his equipment at Edgehill and place it in charge of No. 21 C.C.S. As already noted it left Edgehill with the personnel of the latter on the 24th March, but the orders to close the group at Edgehill were then countermanded

and the group reopened. In the afternoon of that day the following order was received by Lieut.-Colonel Rae from the D.M.S., Third Army :—

> " 56 and 48 C.C.Ss. are to close at once and hand over all cases to 3 C.C.S., together with buildings. No more cases will be taken in. All will be diverted to Doullens. Two C.C.Ss. will pack up at once. 3 C.C.S. will evacuate all cases by A.T. as speedily as possible and then pack up."

There was no mention in the order of Nos. 29 and 21, but the D.M.S. clearly intended Edgehill to be closed and no more wounded sent there. Its position was becoming dangerous in consequence of the enemy's advance into the area between the Ancre and the Somme. Some trucks were obtained at 10 p.m., and as much of the equipment of Nos. 48 and 56 as they would hold loaded on to them. The wounded were all cleared by ambulance train and temporary ambulance train, except a few waiting evacuation by ambulance cars. It was Lieut.-Colonel Rae's intention at first to send the personnel of all the casualty clearing stations away by the train with the equipment, but as no engine had arrived for it by 1 a.m., he ordered the personnel of Nos. 3, 29 and 56 to march to Doullens, a small detachment of one officer and ten other ranks of No. 3 being left behind to look after any wounded who might arrive at Edgehill. The personnel of No. 48 had already departed on another train, leaving the equipment behind, as already noted.

A train had been sent to Edgehill in the early morning, and also twenty lorries, which were to be loaded with the equipment left behind at Edgehill. At Warloy, Lieut.-Colonel Rae, with the O.C. of No. 56 C.C.S. and a party of other ranks from No. 3 and No. 56, returned to Edgehill in cars of a motor ambulance convoy, which had been diverted to Warloy for the purpose, in order to salve the equipment. The remainder of the personnel of these units and the personnel of No. 29 reached Doullens on the evening of the 25th March.

The party from No. 56 C.C.S. brought thirty-two lorry loads of hospital equipment away from Edgehill to Gézaincourt. There is no record of the equipment salved by the train, but such equipment as had been got away was taken to Gézaincourt, where Nos. 3, 29, and 56 C.C.Ss. assembled on the 26th March. The equipment and tentage were pooled and the group of three casualty clearing stations opened on what had been the site of casualty clearing stations during the Somme battles of 1916. No. 56 C.C.S. took over the records and reception of the wounded, No. 29 was put in charge of the walking

wounded, while No. 3 took over the seriously wounded and the officers' hospital in the Château. With the stores of No. 45 C.C.S. and such equipment as had been salved from Edgehill each unit was more or less fully equipped for 500 patients and at the end of the month worked as separate units.

The number of sick and wounded received by this group of casualty clearing stations between the 23rd and 30th March was 2,101 according to the O.C. of No. 56 C.C.S., who kept the records. The number received during the previous two days by No. 56 C.C.S. was 4,205 wounded and 49 sick.

There were still three casualty clearing stations in the southern sector of the Third Army, namely No. 38, No. 4 and the Lucknow, all of which had been taken over from the Fifth Army with the VIIth Corps. No. 38 had been withdrawn from Maricourt Plateau on the 24th March by the D.M.S. of the Fifth Army, salving a considerable portion of its stores but abandoning half its tentage. Forty lorry loads and sixty-six ambulance car loads were brought to La Neuville, Corbie, and the unit opened there on the 25th March. It then came under the Third Army. On the 26th March the enemy was said to be approaching, communication with the D.M.S. was cut off, and the railway staff had been withdrawn. The patients were evacuated by an ambulance train and also by motor ambulance convoy to Amiens; the stores were abandoned, and the personnel marched to Amiens. Corbie, however, although constantly under shell fire, did not fall into the hands of the enemy, and during the remaining days of March most of the equipment and stores were got away on lorries and dumped at Vignacourt. The personnel was sent to Pont Remy, and remained there until the unit went on 11th April to Fienvillers.

No. 4 C.C.S. had been sent from Dozinghem under orders from the D.G.M.S. to reinforce the Fifth Army. It arrived by train, complete in every respect, on the 26th March at Vecquemont, but did not unload. Lieut.-Colonel Rahilly, who commanded it, took the precaution of keeping the engine with the train, although the engine driver had no coal or water. He had been unable to get in communication with the D.M.S. of the Third Army, but collected all the coal he could in the village and had the train moved down the line. It was held up about six miles out, but eventually got away to Abbeville, being bombed until it passed Amiens. At Abbeville the D.A. & Q.M.G. of the L. of C. gave him permission to take over an Army Musketry School at Pont Remy.

He arrived there on the 29th March, and opened on 1st April with accommodation for 1,000, half in huts and half in marquees.

The move of the Lucknow C.C.S., which had come to Vecquemont from Peronne-la-Chapellette and Maricourt, has been described in the account of the moves of casualty clearing stations of the Fifth Army. It was withdrawn to Pont Remy by the D.M.S., Third Army, and was able to open there with such equipment as it had salved. It should be noted, however, that a detachment of the unit was with No. 22 C.C.S. at Bruay, in the First Army area, for the reception of sick and wounded Indian drivers of ammunition columns.

After the 26th March, consequently, no casualty clearing stations of the Third Army were open south of Doullens or east of the Doullens–Amiens road. Doullens and Gézaincourt were then the centres to which wounded were concentrating. No. 3 (Canadian) Stationary Hospital was crowded with them, and was also receiving quantities of surplus stores sent back there by medical units. Mobile laboratories and personnel of other casualty clearing stations also found their way there and were attached for duty.

The numbers admitted to and discharged day by day from this stationary hospital in the Citadel, Doullens, were as follows :—

Date.	Admitted.	Discharged.
March 1918.		
21st	276	28
22nd	517	542
23rd	1,064	226
24th	649	955
25th	673	1,172
26th	1,622	1,411
27th	1,932	1,975
28th	2,333	2,109
29th	2,228	2,433
30th	1,154	1,694
31st	941	980

The hospital was visited by H.M. the King on the 29th March, during the heaviest period of work.*

In April the admissions were not so numerous, although on the 5th, 6th and 10th they exceeded 1,000.

* The King, during His Majesty's visits to the front, visited many other medical units at various stages of the war, and in July 1917 Her Majesty the Queen made an extended tour of the hospitals on the Lines of Communication and at General Headquarters.

The evacuation of patients from the casualty clearing stations at Gézaincourt and from No. 3 (Canadian) Stationary Hospital was controlled by Lieut.-Colonel Fitzgerald of No. 45 C.C.S. The former were receiving chiefly those wounded which were being sent back by the light railway from Acheux, and were thus connected more with the operations in the northern sector of the Third Army; the latter was receiving casualties that were being cleared from the field ambulances of the southern sectors by road. Lieut.-Colonel Fitzgerald's chief concern was to relieve the congestion at the Citadel. The entraining station at Doullens was more than a mile from the Citadel, and a large number of ambulance cars was necessary for bringing the wounded from the hospital to the trains. Consequently it happened that in an emergency some of the cars bringing wounded back from the field ambulances were requisitioned by Colonel Fitzgerald to assist in this work; this lead to great delay in their return to the field ambulances and consequent difficulty in getting wounded away from the advanced dressing stations before the enemy's advance. At Gézaincourt, on the other hand, entraining was easy, as there was an ambulance train siding at the site of the casualty clearing stations. It was, however, some three miles distant from the Citadel, and therefore of less value as an entraining centre for No. 3 (Canadian) Stationary Hospital.

The casualty clearing stations in the northern sector of the Third Army did not suffer to the same extent as those further south. No. 20 C.C.S. remained at Boisleux-au-Mont while No. 43 C.C.S., which had been withdrawn from that advanced position early in March, was being established at Bac du Sud. It was, however, being dismantled and tentage was being pitched for it at Bac du Sud before the German attack on the 21st March. In fact it was practically closed for the admission of casualties. All wounded arriving at Boisleux-au-Mont were sent on to Bac du Sud. The nursing sisters, with the exception of three, had been sent away on the 17th March. After the attack the work of dismantling and removing the huts of No. 20 C.C.S. was continued until the 24th March, when the unit finally moved to Bac du Sud, having salved everything except two Adrian huts, outbuildings and a Thresh disinfector. It did not, however, open for work at Bac du Sud, but was moved by train to Vignacourt, where it commenced to open under canvas on the 28th March. It opened there on the 1st April and came under the Fourth Army command on the 8th April.

Consequently all the work of evacuating the wounded from the sector immediately south of Arras fell upon No. 43 C.C.S. at Bac du Sud. Seven surgical teams were at work there and the tentage and other accommodation of No. 20 C.C.S. was utilized by it. It was not till 4 p.m. of the 21st March that wounded began to arrive in a constant stream of about forty hourly, a number which had increased to about sixty hourly by the 25th March. On that day the advance of the enemy placed Bac du Sud in a position of danger, and during the night of the 25th/26th March the D.M.S. ordered the sisters to be sent away, No. 20 C.C.S. to pack up and move by rail, and No. 43 C.C.S. to have as much as possible of the equipment not in use ready at the railway siding. Twenty trucks had been requisitioned for the purpose of removing the equipment by rail. The wounded continued to stream in, however, and at 9 a.m. of the 26th 1,015 were in the unit, 2,455 having been evacuated during the previous twenty-four hours. During the rest of the day the unit was actively engaged in preparing for a move and in sending the wounded away by road and rail. All patients were cleared by 5.45 p.m. and by 4.15 a.m. of the 27th the twenty trucks had been loaded and moved off. Field ambulances of the VIth Corps divisions took over the site immediately afterwards. The personnel of No. 43 C.C.S. was sent by lorries to Frévent, where the train with the equipment arrived at 7 p.m. No 43 C.C.S. was then reopened at Frévent on the 1st April. The work of the unit at Bac du Sud was thus exceptionally severe. Between the 21st and 26th March 6,134 casualties were admitted. The number of major operations performed was 420.

The remaining group of casualty clearing stations in the Third Army were Nos. 7, 8 and 19 at Agnez-les-Duisans. The work there was not of an exceptional character and the casualty clearing stations were affected by the German offensive to a much less extent than the other casualty clearing stations of the Army. It was considered advisable, however, to reduce the number of units on this site. Nos. 7 and 19 C.C.Ss. were closed, the former on the 26th March, and the latter on the 28th March. No. 7 had only opened for work at Agnez-les-Duisans two days before the attack. It had arrived there from Bracquemont (Noeux-les-Mines) on the 6th of March. After closing at Agnez it was transferred to Ligny St. Flochel, about four miles east of St. Pol, near the Arras road, where it detrained on the 29th March and opened a few days later on the site of the Third Army Trench Mortar School with accommodation

for 700 to 1,000 in eighty marquees, some huts, and buildings.

No. 19 C.C.S. left Agnez on the 29th March for Frévent, where it reopened near No. 43 C.C.S. on the 15th April. But on the 28th March a detachment had been sent to open a casualty clearing station for receiving walking wounded at Avesnes-le-Comte. This was converted into an advanced operating centre on the 2nd April. The detachment remained there until the 12th April, when it was withdrawn.

No. 8 C.C.S. remained at Agnez-les-Duisans. Its heaviest day's work was during the twenty-four hours ending 9 a.m. on the 29th March, when 1,545 wounded were admitted from the attack along the Scarpe Valley. The unit was transferred to the First Army on the 7th April, when the XVIIth Corps sector was transferred to that Army. It remained at Agnez till the 17th April, when, in consequence of the renewal of the German offensive, Agnez-les-Duisans was abandoned and the casualty clearing station moved back to Wavrans.

No. 3 (Canadian) C.C.S. was transferred from Remy Siding to Frévent on the 26th March. It opened near No. 6 Stationary Hospital in fields where Nos. 19 and 43 C.C.Ss. were also being established after their withdrawal from Bac du Sud and Agnez-les-Duisans.

The successive moves of the Third Army casualty clearing stations as described above are shown on the sketch map. It will be seen that by the end of March they were all, except No. 7, west of, or on, the main railway line from St. Pol to Amiens.

Although most of the casualty clearing stations had lost some of their equipment, enough had been salved to enable all but one, No. 48, to carry on. No. 48 was sent to Boulogne by order of the D.G.M.S. to refit, its personnel being employed in No. 3 (Canadian) Stationary Hospital at Doullens till it was again ready to go to an Army. Although all the equipment of No. 45 C.C.S. had been salved it had been divided amongst the casualty clearing stations at Gézaincourt, and it too was sent to Boulogne to be refitted.

On the 6th April the XVIIth Corps area was taken over by the First Army and with it went the casualty clearing stations at Agnez-les-Duisans and Ligny St. Flochel. On the following day the Fourth Army took over the VIIth Corps area, with No. 4 and the Lucknow C.C.Ss. at Pont Remy, and No. 20 at Vignacourt. Later on No. 49 at St. Riquier also came into the Fourth Army area.

The headquarters of the Third Army then moved to Hesdin,

and No. 59 C.C.S. there was transferred to it from G.H.Q. A large amount of surplus stores salved from medical units during the retreat had accumulated at Doullens and these were transferred to No. 59 C.C.S.

The D.M.S. of the Third Army then arranged for No. 45 C.C.S. to be placed at Auchy-les-Hesdin in the Ternoise Valley, and No. 48, now re-equipped, at Fillièvres in the Canche Valley, half-way between Hesdin and Frévent. Ligny-sur-Canche in the same valley and Wavans in the valley of the Authie between Doullens and Auxi-le-Château were also subsequently selected as sites for Third Army casualty clearing stations. No. 21 C.C.S., from Auxi-le-Château, was moved to Wavans; No. 3 (Canadian) from Frévent to Ligny-sur-Canche. No. 38 C.C.S., which had been sent to Vignacourt, was moved to Fienvillers, on the Doullens–Domart road, when Vignacourt came into the Fourth Army area.

Medical Stores and Laboratories.

None of the advanced depôts of medical stores or mobile laboratories of the Third Army lost their equipment. No. 15 Advanced Depôt was at Frévent throughout, No. 16 had moved from Boisleux-au-Mont to Bac du Sud before the attack and was transferred from there to Auxi-le-Château and then to Wavans with No. 21 C.C.S.; No. 34 was moved from Albert, on the 23rd March, to Beauval and thence, in the middle of April, to Gézaincourt. Savy, where No. 33 was established, came into the First Army area on the 6th April and the unit was transferred then to that Army.

Medical Services of Corps.

The medical services of the divisions and corps in the Third Army during the German attack worked methodically throughout, falling back from point to point without confusion and according to plan.

The Vth Corps.—No attack developed on the sector held by the Vth Corps on the 21st March, but it was severely shelled with gas shells on the Trescault front from the 12th to 14th March, as many as 2,131 gassed patients being admitted to its medical units during that period. The corps, however, had to retire on the 21st March in conformity with the retirement of the VIIth Corps on its right and the IVth on its left. On the 22nd March one of its divisions, the 17th, was heavily attacked at Hermies, and although the enemy was repulsed, the corps was again obliged to retire in conformity with the

retirement of the corps on its flanks. The casualties admitted to the field ambulances were comparatively few as many were captured by the enemy in the forward areas. None admitted to the field ambulances, however, were abandoned. The medical units fell back from day to day until, on the 25th March, the dressing stations were all west of the Ancre ; and on the 27th March a corps main dressing station was formed at Clairfaye near Acheux. All the walking wounded were collected at Acheux and sent to Gézaincourt by the light railway.

The wounded collected by the divisional field ambulances of the corps numbered 4,991 between the 21st and 31st March, the greatest number on one day being 971 on the 23rd March.

The IVth Corps.—The IVth Corps advanced dressing stations at Doignies, Beetroot factory, and Vaulx were rapidly cut off on the attack of 21st March, and many of the wounded of the 51st Division were captured at Beetroot factory advanced dressing station. Wounded came in very slowly, as few could be collected owing to the enemy's rapid advance ; but during the first twenty-four hours approximately 85 officers and 1,619 other ranks had been admitted to field ambulances. The main dressing stations were at Beugny and Favreuil, and to these points the advanced dressing stations withdrew. A corps main dressing station and collecting station for walking wounded were opened at a place called Loch's Camp about one and a half miles from Bapaume on the Bapaume–Cambrai road.

The casualties amongst the R.A.M.C. were heavy :—

	Killed.		Wounded.		Missing.		Total.	
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.
6th Division	—	3	—	4	—	—	—	7
25th Division	1	1	—	2	1	25	2	28
51st Division	2	?	1	?	—	?	3	*

* The 51st Division had about 100 other ranks R.A.M.C. killed, wounded or captured.

The field ambulances retired day by day on Grevillers and thence to the west of the Ancre practically to the positions occupied by field ambulances of the VIIIth Corps during the battles of the Somme in 1916.

The VIth Corps.—The VIth Corps held the sector south of Arras. Main dressing stations were open at Ervillers, Hamelincourt and Ficheux, with advanced dressing stations at Noreuil

and Ecoust for the 59th and 34th Divisions, which were the two in the line at the time of the attack. A walking wounded collecting station was at Mory. The advanced dressing stations at Noreuil and Ecoust were captured on the 21st March; on the 22nd March the main dressing station at Ervillers, and on the 23rd March the main dressing stations at Ficheux and Hamelincourt were withdrawn. Main dressing stations were then opened at Blairville and Ayette.

During the first forty-eight hours of the battle 70 officers and 1,589 other ranks passed through the dressing stations; 11 officers and 146 other ranks of the R.A.M.C. were missing in the 59th Division alone, and in the 34th Division two R.A.M.C. officers and four other ranks were killed, one officer and six other ranks wounded, and two officers and twelve other ranks missing.

On the 24th March four divisions, the 40th, 31st, Guards, and 3rd, were in the VIth Corps front line. On the 27th March a corps main dressing station was formed at Bac du Sud on the site of No. 43 C.C.S., with advanced dressing stations at Wailly, Blairville, and Monchy-au-Bois. Walking wounded went to a field ambulance at Gouy and thence to the detachment of No. 19 C.C.S. at Avesnes-le-Comte. The position of the corps medical services was then very much the same as those of the VIIth Corps during the battle of Arras in 1917. The 2nd Canadian Division joined the corps on the 30th March and the line was then held by it and the Guards and 31st Divisions.

The XVIIth Corps.—The XVIIth Corps, which held the Scarpe Valley sector, was not attacked till the 28th March. As its line was not withdrawn, there was practically no disturbance of its medical arrangements. The number of wounded collected during the twenty-four hours, from 6 a.m. 28th to 6 a.m. 29th March, was 42 officers and 1,270 other ranks. On subsequent days the casualties were comparatively few.

The Medical Services of Divisions.

The experiences of the medical services of the divisions in the Third Army were similar in many respects to those in the Fifth Army. It was difficult in some instances to maintain constant communication between field ambulance advanced dressing stations and regimental aid posts, chiefly owing to the casualties amongst regimental medical officers. Liaison between brigades and field ambulances had in such instances been defective, especially in keeping the A.D.M.S. informed of the casualties amongst battalion medical officers.

But the chief difficulties were in clearing the wounded back from the advanced dressing stations. The heavy shelling of the roads, and the exceptional congestion of traffic on them made the task extremely arduous. Ambulance cars were held up with wounded in them for long periods, and, further, many of the motor ambulance convoy cars were unable to assist in evacuating the field ambulances, as they had to be employed in clearing the casualty clearing stations when it was impossible to clear them by ambulance trains. Consequently, although reserve convoys under the D.G.M.S. and D.M.S., L. of C. control were sent up to help in clearing the casualty clearing stations, the field ambulance cars had frequently to help the corps convoys in clearing the main dressing stations to Edgehill and Doullens, and were often away for many hours. For instance, as mentioned above, the ambulance cars of one field ambulance were held up at Doullens to assist in moving patients from No. 3 (Canadian) Stationary Hospital to the entraining station. In other cases field ambulance cars on arriving at the casualty clearing station site found it abandoned and had to continue the journey to Doullens ; or on their way back to their unit they might be stopped to pick up seriously wounded and go back with them to a casualty clearing station.

The result of this was that severely wounded collected in advanced dressing stations could not be got away before the enemy captured the position ; but all wounded admitted to a main dressing station were saved from capture.

A.Ds.M.S. of divisions and Os.C. of field ambulances strongly emphasize the importance of establishing main dressing stations of divisions or corps at fixed points during a retreat ; and on field ambulances retaining their own ambulance transport solely for bringing wounded back from the front area and advanced dressing stations to these main dressing stations and no further. Had this been done probably all the wounded collected would have got back.

Medical Arrangements for French Sick and Wounded.

French troops were operating in April in the areas of the Fourth and Third Armies and arrangements were then made by the D.D.G.M.S. in consultation with the D.M.S. of the French Xth Army, Méd. Inspecteur Général Simonin, for French sick and wounded to be received into the casualty clearing stations of the Third and Fourth Armies and cleared from there either by a French ambulance train being brought up,

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CASUALTIES DURING THE GERMAN OFFENSIVE ON THE SOMME 1918.

For each Twenty-four hour period from 6 a.m. to 6 a.m.

Date.	Admissions to Field Ambulances.								Admissions to Casualty Clearing Stations.								Evacuated to the Base.	
	Third Army.				Fifth Army.*				Third Army.				Fifth Army.*					
	Off.	O.Rs.	Total.	Germans.	Off.	O.Rs.	Total.	Germans.	Off.	O.Rs.	Total.	Germans.	Off.	O.Rs.	Total.	Germans.	Third Army.	Fifth Army.*
21.3.18	2	274	276	—	251	5,239	5,490	9	1	107	108	—	298	5,484	0,782	14	2,412	2,421
22.3.18	80	2,105	2,185	12	—			—	53	1,295	1,348	3	216	5,490	5,706	19	3,837	2,704
23.3.18	—	—	—	—	—			—	—	—	—	—	—			—	4,341	6,498
24.3.18	70	1,514	1,584	—	—			—	68	1,896	1,961	—	—			—	3,581	5,653
25.3.18	45	1,577	1,622	7	—			—	170	2,934	3,104	16	—			—	6,133	4,402
26.3.18	61	1,586	1,647	—	—			—	62	2,855	2,917	—	—			—	2,718	8,295
27.3.18	85	2,079	2,164	16	—			—	131	2,477	2,608	7	—			—	4,095	4,117
28.3.18	158	3,611	3,769	20	—			—	195	3,611	3,806	2	—			—	3,242	3,948
29.3.18	66	1,116	1,182	7	—	uncertain		—	105	2,366	2,471	3	—	uncertain		—	5,730	3,801
30.3.18	47	852	899	35	—			—	102	1,095	1,197	8	—			—	2,854	2,282
31.3.18	31	619	650	19	—			—	47	1,193	1,240	1	—			—	1,499	3,064
1.4.18	22	431	453	14	—			—	28	493	521	10	—			—	2,069	887
2.4.18	20	490	510	3	—			—	17	565	582	—	—			—	906	1,164
3.4.18	29	649	678	41	—			—	27	549	576	19	—			—	1,383	450
4.4.18	12	349	361	5	119	2,038	2,157	—	16	607	623	14	80	1,223	1,303	—	1,049	607
5.4.18	130	3,000	3,130	35	36	590	626	—	30	2,495	2,525	14	34	835	869	—	2,310	2,256
6.4.18	75	1,285	1,360	51	10	147	157	1	106	2,703	2,809	14	12	251	263	—	4,375	8,551
7.4.18	23	467	490	—	9	205	214	4	25	611	636	1	12	280	292	1	—	—
8.4.18	46	1,082	1,128	—	6	124	130	—	28	424	452	—	6	149	155	—	1,343	356
Totals	1,002	23,086	24,088	265	431	8,343	8,774	14	1,208	28,276	29,484	112	658	13,712	14,370	34	53,877	61,456

* From 4th April 1918 inclusive the figures shown are Fourth Army figures.

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to the British C.C.S. should the number of French patients justify this, or by French ambulance cars bringing them to a French hospital or to the entraining station of French ambulance trains. The French became responsible for thus clearing their casualties from the British casualty clearing stations, but if they were unable to bring up trains or cars it was arranged to evacuate French sick and wounded along with the British casualties to the British bases where there were also French hospitals, and to have them transferred to these hospitals direct from the ambulance trains. These arrangements worked smoothly in the Third and Fourth Army areas.

Casualties during the German Offensive on the Somme.

The records of the number of casualties admitted to field ambulances and casualty clearing stations of the Third Army are fairly complete ; but the Fifth Army units were unable to maintain their records or had to abandon them. Such records as are obtainable from the diaries of the medical units from the 21st March to 8th April are shown in the table on the preceding page.

CHAPTER XV.

THE GERMAN OFFENSIVE ON THE LYS IN 1918.

THE enemy's offensive against Amiens and Arras had scarcely been brought to a standstill before he launched a second attack, this time against the First and Second Army front from the Bethune–La Bassée Canal to the Ypres salient.

The offensive commenced with a heavy bombardment along the front from Lens to Armentières, more especially of gas shells on the right and left of the British positions, and on the 9th April a strong attack was made on the sector held by the 2nd Portuguese Division in the Neuve Chapelle–Laventie area. The Portuguese had the 55th (British) Division of the Ist Corps on their right on the La Bassée front and the 40th (British) Division of the XIth Corps on their left on the Bois Grenier front. The 51st and 50th Divisions were behind in support. The Portuguese Division was overwhelmed, and the gap made by its retirement was held for a time near Vieille Chapelle by 1st King Edward's Horse and the 11th Cyclist Battalion until the 51st and 50th Divisions came into action. The 40th Division was forced to retire across the Lys, while the 55th held its ground at Festubert. A line was then held on the night of 9th April east of the canalized River Lawe between the La Bassée Canal, north of Bethune, and the Lys Canal at Estaires. The attack was renewed on the 10th April and the enemy pressed back the British line by the evening to the west of the Lawe at Vieille Chapelle, through Lestrem to between Estaires and Merville, and along the Armentières–Bailleul railway to the north of Steenwerck. The attack was also pushed against the 25th and 19th Divisions of the Second Army and the line held by them was driven back to Ploegsteert, Messines and Wytschaete. The 9th Division on the left, however, cleared the position and the Messines ridge was held. In the meantime the 34th Division in Armentières, being thus exposed on both flanks, though not attacked except by previous gas shelling, was withdrawn to the left bank of the Lys.

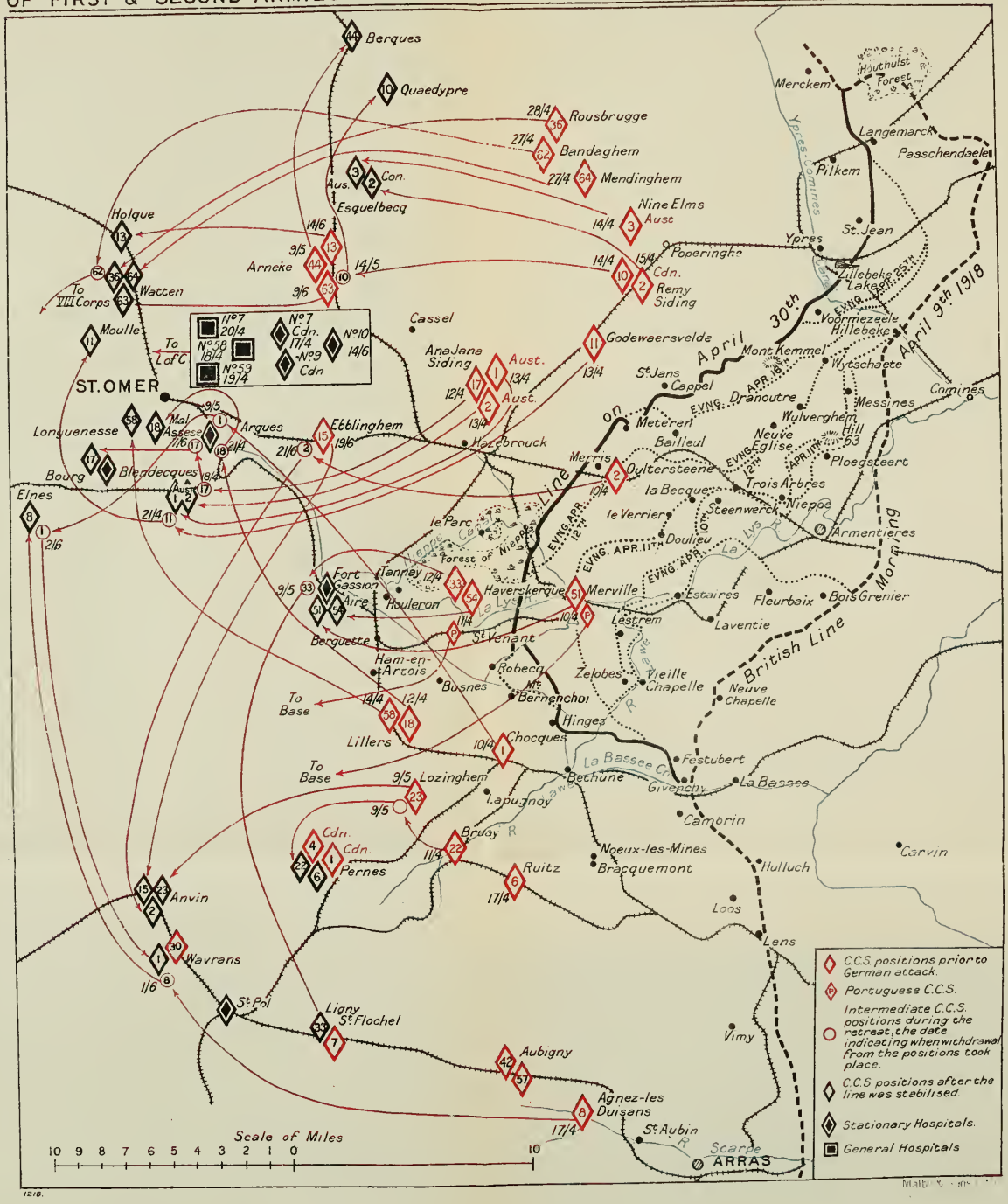
On the 11th April the pressure of the enemy continued and Merville was captured. Much fighting took place on the Messines ridge, and the troops which were holding the Ploegsteert sector were obliged to fall back to positions east of Neuve Eglise and Wulverghem, leaving Hill 63 and Messines positions in the hands of the enemy. Reinforcements were now being brought up from the southern sectors of the First Army and the neighbourhood of Arras.

There was still desperate fighting on the 12th April in the area between Merville and Bethune and in the area between Merville and Bailleul to the east of the Forest of Nieppe. In the former area the enemy broke through the British line and formed a salient between Hinges and St. Venant, reaching its farthest point half-way between Mt.Bernenchon and Robecq. In the latter area the line was forced back to the immediate south of Bailleul and to between Oultersteene and Merris, but the enemy advance towards Hazebrouck was definitely checked between Meteren and the Forest of Nieppe.

Fighting continued north of this line on the following days around Neuve Eglise and Wytschaete, and on the 15th April Bailleul came into the enemy's possession. The British line was then straightened from Meteren to Dranoutre, and shortened in the Ypres salient by gradual withdrawal from the Passchendaele ridge. French forces forming a detachment of the Armée du Nord were moved in support of the British. On the 17th April attacks were made on Kemmel Hill and along the whole front from Givenchy to west of Merville, but were repulsed. French troops then gradually relieved the British and by the 21st April held the whole of the front from St. Jans Cappel to Kemmel Hill with four divisions.

Fighting then died down till the 25th April when a strong attack was made on the French and British line from Bailleul to the Ypres–Comines Canal. The 9th Division with part of the 49th and 21st Divisions were on the French left in the neighbourhood of Wytschaete and the 1st Australian on the French right south-west of Bailleul. The main attack was on the Kemmel Hill and on the 9th Division positions. Kemmel Hill was captured from the French, but after counter-attacks by the 9th, 21st, 25th, 49th, 30th and 39th Divisions in conjunction with the French the line remained otherwise unbroken. Owing to the occupation of Kemmel Hill by the enemy, however, the line of the Ypres salient was withdrawn to east of Pilckem and St. Jean, and thence to Zillebeke Lake and the west of Voormezeele.

MOVEMENT OF CASUALTY CLEARING STATIONS OF FIRST & SECOND ARMIES DURING THE GERMAN OFFENSIVE ON THE LYS, 1918.



1216.

With another determined attack on the 29th April, which was repulsed, the German offensive of 1918 on the British front ended.

In the meantime the 8th, 21st, 50th and 25th Divisions were being transferred under the IXth Corps command to replace French divisions of the Sixth French Army that were sent to support the British behind Amiens. The 8th, 21st and 50th Divisions were put into the line north-west of Rheims, and, with the 25th Division, were involved in a great German attack along the whole of the Aisne front to Rheims on the 27th May. The allied line was broken and the enemy reached the Marne, where on the 6th June his advance was checked.

On the following day " a fresh battle broke out on the French front between Noyon and Montdidier,"* but without serious effect on the allied line. It was then, however, necessary to withdraw the French divisions from the British area in Flanders to the French front south of the Somme, and four more British divisions were placed at the disposal of Marshal Foch behind the junction of the French and British in front of Amiens. The XXIInd Corps with the 51st, 62nd, 15th and 34th Divisions was accordingly sent to positions behind the junction of the French and British on the Amiens front. The result of these operations on the British medical services is described later on.

The Medical Situation at the time of the Offensive.

With regard to the medical services during the offensive on the Lys, the events on the Somme had given early warning of the disadvantages and risks of retaining casualty clearing stations in forward positions.

The experience of the ten days of the German offensive against the Fifth and Third Armies had also shown how important it was for medical units to retain their mobility and to be guided by the principles laid down in the Manual of R.A.M.C. Training. This was impressed on the medical services by the D.G.M.S. in the following memorandum issued on the 2nd April to Ds.M.S. of Armies :—

" The experience of the last ten days of March demonstrates the paramount importance of medical units maintaining their mobility in the field.

" Trench warfare and the desire to carry on surgical work to the highest degree of perfection have led casualty clearing stations to become large and immobile units, pushed as far forward as possible, thus diminishing the tactical importance of maintaining mobile main dressing stations at intermediate positions.

* Sir Douglas Haig's despatches, p. 254.

"The consequence of this has been that in certain areas casualty clearing stations have had to abandon valuable equipment in retiring, that in some instances no main dressing stations had been opened in their place for the reception of wounded, and that the motor ambulance cars of the field ambulances have been employed in carrying the wounded back to casualty clearing stations to the new positions of the latter farther back.

"In consequence of the time lost in returning from these, the field ambulance cars have not been able to arrive in time to remove lying-down cases collected at the collecting posts by the bearer divisions, and many wounded unable to walk have been abandoned.

"Much of this might have been avoided if the principle had been invariably adhered to of working the motor ambulance transport of field ambulances in collecting wounded from collecting posts to main dressing stations and no farther.

"Your attention, therefore, is directed to the importance of arranging that when casualty clearing stations are situated far back from the front line, as they ought to be in the present military situation, intermediate main dressing station positions, which can be moved rapidly in echelon backwards or forwards as required, shall be established by divisions or corps, and that the motor ambulance transport of the field ambulances in the front area shall be employed for bringing wounded back only to these main dressing station points.

"The motor ambulance convoys are intended for the purpose of working between main dressing stations and the casualty clearing stations and should be employed for that purpose and not for general work in a pool with the motor ambulance transport of the field ambulances.

"Should our front line in the course of pressure by the enemy be forced back, the withdrawal of the main dressing stations will necessarily be in accordance with the general situation, but they should be established at suitable points in echelon during the withdrawal, so that there shall always be a point to which the motor ambulance transport of the field ambulances can bring their wounded without having to go farther back, and to which the motor ambulance convoys can work without having to go farther forward."

In other respects the Director-General's arrangements issued on 6th March held good. Motor ambulance cars and surgical teams were diverted from the Third and Fifth to the First and Second Armies, when the position of the former had become stable and resources which had been at the disposal of the D.G.M.S. during the Somme offensive were available for the offensive on the Lys.

After the battle of Vimy Ridge in 1917 the D.M.S. of the First Army had moved his casualty clearing stations to positions much nearer the front line than had previously been considered advisable. In September and October 1917 he had transferred No. 30 from Aubigny and No. 57 from Aire to Anzin-St. Aubin, in the Scarpe Valley, about three miles north-west of Arras and about nine from the front line. In November and December he had established a group of three casualty clearing stations, No. 6, No. 1 (Canadian) and No. 4 (Canadian), under canvas and in huts in open ground near Ruitz, about seven miles from the front line; while another casualty clearing station, No. 7, was still farther forward at Bracquemont,

Noeux-les-Mines, only slightly more than four miles from the front line. No. 33 C.C.S. at Bethune, and Nos. 51 and 54 at Merville were also within the danger zone, at distances of five and seven miles respectively from the front line. No. 1 at Chocques was also within ten miles of the front line. With the exception of Bethune, Noeux-les-Mines and St. Aubin, which were frequently exposed to long range high explosive shells, these units had been fairly free from hostile action. But the positions were recognized to be unsuitable for a policy of defence. No. 7 C.C.S. was consequently transferred from Bracquemont on the 6th March to Agnez-les-Duisans, as noted in the previous chapter ; and before the German offensive of the 21st March had taken place, No. 57 was being moved to Aubigny from St. Aubin. No. 33 had been moved from Bethune towards the end of February to a site near Haverskerque ; so that the units remaining at Ruitz, St. Aubin, Chocques and Merville only were within the danger zone on the 21st March.

On the 23rd March, in consequence of the events in the Fifth and Third Armies, the D.G.M.S. instructed the D.M.S., First Army, to move back his casualty clearing stations from these places with the least possible delay to positions which would enable evacuation by ambulance train to be carried out from the railway line running through Lapugnoy, Pernes and St. Pol. If the D.M.S., First Army, considered it essential to retain within the more forward zone means of dealing with urgent surgical cases, he was instructed to form an advanced operating centre with personnel and material capable of being moved by the lorries belonging to the casualty clearing stations. In fact, all casualty clearing stations had been warned by the D.G.M.S. as early as the 3rd March to be in possession of their mobilization equipment of marquees in the event of their being required to move at short notice. Many of these marquees had been distributed to field ambulances for various purposes, especially those of casualty clearing stations which had been accommodated in buildings and huts.

Consequent on these instructions, the D.M.S. of the First Army immediately moved No. 30 from St. Aubin to Wavrans on the St. Pol–Anvin railway line, No. 54 from Merville to Haverskerque alongside No. 33, and No. 4 Canadian from Ruitz to Pernes on the St. Pol–Lapugnoy line. These moves had been completed before the attack of the 9th April. No. 18 was also moved as a precautionary measure from Lapugnoy to Lillers at the beginning of April. The section of the Lucknow

C.C.S. attached to No. 22 at Bruay for Indian drivers was not, however, moved back at that time.

The situation of casualty clearing stations of the First Army on the 9th April was consequently as follows :—

Casualty Clearing Station.	Locality.	Distance from Front.
	Forward Areas—	
No. 1	Chocques	8 miles.
No. 6	Ruitz	7 miles.
No. 22	Bruay	9 ,,
Lucknow (detachment)	,,	
No. 51	Merville	7 ,,
	Intermediate Areas—	
No. 23	Lozinghem	11 ,,
No. 42	Aubigny	11 ,,
No. 57	,,	
No. 58	Lillers	12 ,,
No. 18	,,	
No. 33	Haverskerque	11 ,,
No. 54	,,	
	Back Areas—	
No. 30	Wavrans	18 ,,
No. 4 (Canadian)	Pernes	15 ,,
No. 1 (Canadian)	,,	
No. 7	Ligny St. Flochel	18 ,,

There was also a Portuguese C.C.S. at St. Venant, and No. 8 C.C.S. at Agnez-les-Duisans was practically taken over by the First Army, although not actually transferred for some days later.

The casualty clearing stations of the Second Army were also being moved from forward positions. The most advanced of the casualty clearing stations was No. 2 (Australian) at Trois Arbres, within four or five miles of the front line. It was moved to Oultersteene on 15th March. It then formed one of a group of casualty clearing stations there with No. 2 and No. 1 (Australian), but these casualty clearing stations, and No. 53 at Bailleul, Nos. 4 and 47 at Dozinghem, were also in a dangerously forward area of six to eight miles from the front line. The Bailleul and Dozinghem positions were abandoned by the transfer of No. 47 C.C.S. to the Fifth Army on the 7th March, No. 53 on the 8th March, and No. 4 on the 25th March. The casualty clearing station group at Oultersteene was then transferred during the first week in April to a siding on the railway line north-west of Hazebrouck

called " Ana Jana Siding," one of the group, No. 2, being sent still farther back to Ebblinghem, between Hazebrouck and Arques, where No. 15 had already been established after the battles of Ypres in 1917.

There were, however, other groups of casualty clearing stations within the danger zone when the offensive of 9th April was launched, and the D.M.S. of the Second Army had been taking steps to reduce the number of casualty clearing stations in the forward areas. No. 3 (Canadian) C.C.S. had been transferred from Remy Siding to the Third Army on the 25th March, and No. 17 to Ana Jana Siding on the 2nd April, leaving only No. 10 and No. 2 (Canadian) C.C.S. at Remy Siding. No. 12 C.C.S. was transferred from Mendinghem to the Fifth Army on 30th March, and only No. 64 remained at that place. No. 44 C.C.S. was moved from Nine Elms to Arneke on the 5th April, No. 3 (Australian) only remaining at Nine Elms. Of the two at Bandaghem, No. 63 C.C.S. was transferred to Arneke on the 3rd April, leaving No. 62 C.C.S. there.

The position of casualty clearing stations in the Second Army in anticipation of the offensive was consequently as follows :—

Casualty Clearing Station.	Locality.	Approx. Distance from Front.
	Forward Area—	
No. 10	Remy Siding	8 miles.
No. 2 (Canadian)	,,	8 miles.
No. 11	Godewaersvelde	9 ,,
No. 64	Mendinghem	8 ,,
No. 36	Roosbrugge	9 ,,
No. 3 (Australian)	Nine Elms	8 ,,
No. 62	Bandaghem	9 ,,
	Back Area—	
No. 13	Arneke	20 ,,
No. 44	,,	20 ,,
No. 63	,,	20 ,,
No. 15	Ebblinghem	19 ,,
No. 2	,,	19 ,,
No. 17	Ana Jana	15 ,,
No. 1 (Australian)	,,	15 ,,
No. 2 ,,	,,	15 ,,

The Medical Services of the First Army during the Offensive.

The Casualty Clearing Stations.—Immediately after the German attack on the 9th April, the casualty clearing

stations of the First Army at Ruitz, Bruay, Chocques, Lillers, Merville and Haverskerque were in danger; No. 6 C.C.S. was withdrawn from Ruitz to Pernes; No. 22 from Bruay to Lozinghem; No. 51 from Merville and Nos. 33 and 54 from Haverskerque to Aire by the 12th April. The two casualty clearing stations at Lillers, No. 18, which had just come there, and No. 58, were rapidly withdrawn, the former to Arques and later on to Malassise, and the latter to Longuenesse in the St. Omer area. No. 1 was withdrawn from Chocques to Arques on the 10th April. These three casualty clearing stations remained, however, parked for the time being pending a decision regarding the move of Lines of Communication medical units from St. Omer and Arques.

The Portuguese casualty clearing stations at Merville and St. Venant, owing to the attack on the Portuguese front and the reorganization of the Portuguese divisions, were withdrawn and arrangements had to be made by the D.M.S. of the First Army for their wounded being taken over by British medical units.

The situation, therefore, in the First Army during the first week of the German offensive on the Lys was that all of its casualty clearing stations, except Nos. 22 and 23, which were at Lozinghem, Nos. 42 and 57 at Aubigny, and No. 8 and No. 7, which were at the disposal of the First Army, or had been taken over by it from the Third Army at Agnez-les-Duisans and Ligny St. Flochel, were back in the neighbourhood of St. Omer, Aire, Pernes and Wavrans. No. 8, however, was moved from Agnez-les-Duisans to Wavrans on the 17th April.

The D.M.S. of the First Army had been under the impression that his casualty clearing stations could be established at St. Omer, but, when it was decided that St. Omer should come into the Second Army area, he withdrew No. 1 from Arques to Elnes the nearest point to St. Omer in the First Army area. No. 18 at Arques and No. 58 at Longuenesse were then transferred to the Second Army. Subsequently, at the beginning of July, Elnes passed into the Fifth Army area. No. 8 C.C.S. and No. 1 C.C.S. then took one another's place at Elnes and Wavrans respectively, owing to the desire of the First Army D.M.S. to retain No. 1 C.C.S. in his area.

This situation of the casualty clearing stations remained unchanged in the First Army during April, the casualties being evacuated to the casualty clearing stations in these localities through main dressing stations of corps and divisions. Neither personnel nor much of the equipment of casualty

clearing stations had been lost owing to the early steps taken to withdraw them from forward positions. But the two casualty clearing stations at Lozinghem, Nos. 22 and 23, remained within six or seven miles of the farthest point to which the Germans advanced in the direction of Lillers. Lozinghem was then exposed to artillery fire and both the casualty clearing stations there were shelled on the 9th May. They were then withdrawn to Pernes and Anvin respectively.

Until the end of the German offensive and the commencement of the allied advance, the First Army evacuation centres were thus concentrated at Aire, Pernes, Wavrans, Anvin, Aubigny and Ligny St. Flochel, to which No. 33 was moved from Aire on the 9th May. In addition, the First Army had two stationary hospitals, No. 39 at Fort Gassion, Aire, and No. 12 at St. Pol.

The situation of casualty clearing stations of the First Army was therefore as follows at the end of the German offensive :—

Aubigny	.. Nos. 42 and 47.
Wavrans	.. Nos. 30 and 1 (replaced at Elnes by No. 8).
Pernes	.. No. 4 (Canadian), 1 (Canadian), No. 6 and No. 22.
Ligny St. Flochel ..	.. Nos. 7 and 33 (from Aire).
Aire	.. Nos. 51 and 54.
Anvin	.. Nos. 23, 2 and 15 (the two latter C.C.Ss. had been transferred from the Second Army at the end of June).

Most of the new sites selected, such as those at Wavrans, Pernes and Anvin, were at some distance from the railway line, owing to the frequent shelling of and air raids on railway stations and junctions.

The D.M.S. of the First Army had delegated a part of the administration of his casualty clearing stations to the D.Ds.M.S. of Corps in whose area they were situated, as by so doing he considered that the casualty clearing stations would have more ready assistance from the corps staff in connexion with engineer services and with the control of wastage. This delegation of control or modified administration was not favoured by the D.G.M.S. at G.H.Q. and was not officially recognized, the main objections being that the control of the casualty clearing stations became a dual control, being partly by the D.M.S. of the Army and partly by the D.D.M.S. of the corps, and that as the corps areas were constantly changing, the O.Cs. of casualty clearing stations would consequently be subjected to frequent changes in administrative

control. Further, the work of casualty clearing stations was not corps work. They received casualties from more than one corps, so that the regulation of the admission to any one casualty clearing station could not be vested in the D.D.M.S. of any one corps but only in the D.M.S. of the Army. The casualty clearing stations were essentially the links between armies and the lines of communication, and it was therefore extremely undesirable that their administration should pass out of the hands of the Army Headquarters administration into that of a tactical formation such as a corps. It was not surprising, therefore, that this system of delegation of control led to difficulties when the battle commenced and the withdrawal of casualty clearing stations from their old positions to positions farther back became necessary. In fact, the diaries of the D.Ds.M.S. of corps in the First Army during and after the offensive are filled to a great extent with details of transfers of casualty clearing stations from one corps to another and with discussions regarding the administration of a casualty clearing station receiving only the sick and wounded of one corps and in selecting sites and other details for the establishment of casualty clearing stations, matters which should properly have been settled by the D.M.S. of the Army.

The Outbreak of Influenza.—During May and June influenza of a mild type had been more or less prevalent in the First Army, extensive outbreaks constantly occurring in various units and manifestly of a very infectious character. It became so marked that the D.M.S. of the Army issued a special instruction on the subject on the 20th June, the chief object of which was to retain the patients under treatment in the army area and thus avoid their evacuation to the base. It was not then considered to be of a serious nature, and the patients returned to duty after a week or ten days. However, on the 21st June, 3,000 beds at Etaples were placed at the disposal of the First Army for these cases by the D.G.M.S. The patients were to be sent there by special ambulance trains, labelled "First Army P.U.O.* Special, Etaples." On recovery they were to be returned direct to the First Army. The first of these special trains left on the 22nd June from Pernes, Aubigny, Ligny and Aire; but difficulties at once arose at the base because at the general hospitals there were no pack stores for kits and equipment which accompanied the

* P.U.O. = "Pyrexia of uncertain origin."

men in order to facilitate their return. The general hospitals had not been organized to function as casualty clearing stations or corps rest stations of armies, and this interference with their functions was not advantageous, more especially as the 3,000 beds were filled up in three days by these special cases from the First Army, and were of no further use.

At the end of the active period of operations in June the high rate of sickness from influenza materially affected the situation, an attack, for example, which had been organized by the 29th Division against La Becque on the 20th June, having to be postponed on account of this.

The Medical Services of Corps.—The corps of the First Army on the 9th April from right to left were the XVIIth, XIIIth, Canadian, Ist, XIth and XVth. The Cavalry Corps was moved into the First Army area just after the attack was launched. The Ist, XIth and XVth were the corps chiefly concerned in the defence against the enemy attack, more especially the two last.

The Ist Corps held the line south of the La Bassée Canal to Lens, with the 46th and 11th Divisions, and with the 3rd and 51st Divisions in reserve, but the number and positions of divisions changed, and on the 14th April the Ist Corps had four divisions in the line, the 11th, 1st, 3rd and 4th, with the 55th in corps reserve and the 46th Division in Army reserve. The 55th Division had been transferred from the XIth Corps on the 12th April after it had held the enemy back at Festubert. The 46th Division front was taken over on the 11th April by the 3rd Canadian Division and went into Army reserve.

As the casualty clearing stations withdrew from the forward positions main dressing stations of field ambulances took their place. The main dressing station of the 11th Division, for example, occupied the site of the casualty clearing stations at Ruitz, where, however, on the 17th April difficulties arose in consequence of two battalions marching to the site and camping there. The D.D.M.S. at once objected to this and the battalions were moved to another site.

On the 24th April the XIIIth Corps took over the left sector of the Ist Corps front along the La Bassée Canal line from Bethune to Robecq and held it with the 3rd and 4th Divisions. The Ist Corps front was then held by the 11th Division on the right sector, the 1st Division in the Cambrin sector, with the 55th Division along a sector from Givenchy to Festubert, and the 46th Division from Festubert to the Lawe river.

The medical services of the Ist Corps were not severely engaged during May, beyond having to deal with the casualties from gas shelling of the 46th Division on the 1st, 2nd and 22nd May. The situation was also unchanged in June, except for gas shelling of the 55th Division on the 9th of the month.

The XIth Corps.—The XIth Corps at the time of the attack consisted of the 55th and 51st Divisions and the 2nd Portuguese Division. The 55th Division had just handed over to the 1st Division of the Ist Corps the portion of its front south of the La Bassée Canal. The 51st Division was in reserve. The Portuguese were in the Neuve Chapelle sector with a main dressing station at Zelobes. When the Portuguese division was driven back a main dressing station was formed by a field ambulance of the 51st Division. The 55th Division at that time was fighting desperately at Festubert and holding the enemy in check, and the remaining brigades of the 51st Division were sent in support. Communication, however, regarding the medical situation was cut off. The 61st Division joined the XIth Corps on the 11th April and the 50th Division on the 12th April, with the 5th Division in a back area. The line was then held by the 51st Division along the La Bassée Canal to Robecq, the 61st Division from there to Merville, and the 50th on its left, north of Merville.

Afterwards the medical situation in the XIth Corps remained more or less stabilized until the 28th June, when the 5th and 31st Divisions attacked towards La Becque, in the area between Bailleul and Estaires. The number of wounded collected then amounted to 867, including 52 Germans. A service of barges on the Lys Canal between Aire and Nieppe Canal had been arranged for these operations. Two barges for twenty stretcher cases and two for eighty sitting cases had been allotted to the 5th Division. The barges for sitting cases plied between Houleron Ferry (near Tannay, half-way between Haverskerque and Aire), where there was a walking wounded collecting post, and Fort Gassion landing stage, the journey there and back being calculated to take one and a half hours only. The barges for the lying-down cases plied between Nieppe Forest and the same landing stage, the advanced dressing station being in the forest near Le Parc and Forester's House. Motor ambulance cars brought the wounded to these posts on the canal, and the barges brought them to the landing stage for No. 39 Stationary Hospital Fort Gassion.

The XIIIth Corps.—The XIIIth Corps medical arrangements were somewhat disorganized by the headquarters of the corps moving to a back area and the 14th and 16th Divisions of the corps being employed in preparing a defensive line behind the First Army. Portuguese brigades were attached to these divisions. The 14th and 16th Divisions had been through the fighting with the Fifth Army and were being reorganized. On the 24th April the corps went into the line on the Aire–La Bassée Canal, taking over the 3rd and 4th

Scene on the Canal in the Forest of Nieppe.

Divisions in that area from the Lawe Canal north of Bethune to the west of Robecq, where the XIth Corps line commenced. The situation on this front was fairly quiet and easy as regards medical services.

The XVIIth Corps.—The XVIIth Corps, which came under the First Army on the 6th April, was not involved in the Lys offensive. As in other corps of the Army, mild influenza was very prevalent in it, as many as 5,956 patients being admitted for pyrexia of uncertain origin in the month of June. Of these, 117 officers and 4,533 other ranks returned

to duty without being evacuated to the base. At the beginning of the offensive of 9th April the divisions in the XVIIth Corps were the 4th, 15th and 56th, and subsequently the 15th, 51st and 56th.

The Canadian Corps.—The Canadian Corps medical services in the sector between the XVIIth and Ist Corps also took no active part in the battles of April. It was withdrawn from the line in the beginning of May, when its front was taken over by the XVIIIth Corps from the Fourth Army with the 20th, 24th and 52nd Divisions, the last having only recently arrived from Palestine.

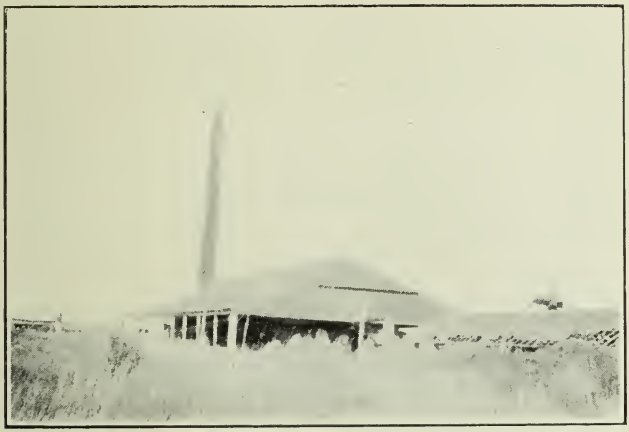
The XVIIIth Corps front remained quiet during the subsequent period of the offensive, with an average of about

Laventie Church, Estaires Front.

twenty, ten and five wounded daily in the three divisions respectively during May.

The XVth Corps.—The XVth Corps was in the First Army area on the left of the Portuguese and XIth Corps on the 9th April, with the 34th, 38th, 40th and 50th Divisions. The 40th and 34th Divisions were then in the line on the Laventie–Armentières front, but only the 40th Division was heavily engaged, although both divisions suffered from mustard gas shells, and help had to be asked for from the Second Army to relieve the congestion in their field ambulances. Twenty lorries were sent, and the D.M.S., First Army, also sent up twenty-five cars to clear the dressing stations of the 40th Division at Doulieu and Le Vervier. The lorries of the Second Army cleared the wounded to its casualty clearing stations at Ana Jana and Remy Siding. The XVth Corps, after the attack

on the 9th April, was reinforced by the 29th and 31st Divisions and it was then transferred to the Second Army on the 12th April. The 50th Division on its right, however, was taken over by the XIth Corps of the First Army, and the 34th Division on its left by the IXth Corps. On the 14th April the 1st Australian Division came into the corps and took over a considerable portion of its front, the other divisions in the corps being then the 29th and 31st. On the 16th April French troops began to come up on the left of the XVth Corps. The 9th Division joined the XVth Corps on the 7th May.



Building used as advanced dressing station near Armentières

No. 2 M.A.C. worked with the corps till the 18th May when it was relieved by No. 14 M.A.C.

During the remaining period of the offensive the chief casualties were from gas shells. The divisions suffered severely from the influenza epidemic, as many as 1,000 being admitted to the field ambulances on the 17th June. The 31st Division took part in the attack on La Becque by the XIth Corps on the 28th June, but this appears to have been the only serious engagement on the XVth Corps front since the first two or three days of the offensive.

The Medical Services of the Second Army during the Offensive.

The Casualty Clearing Stations.—The situation of the medical services in the Second Army was complicated by the French divisions, which occupied the area of some of its casualty

clearing stations, more especially those at Arneke. The position occupied by the casualty clearing stations at Ana Jana Siding was also disturbed by the advance of the enemy towards Hazebrouck. Consequently the three casualty clearing stations there, No. 17, No. 1 (Australian) and No. 2 (Australian), were moved on the 13th April to Blendecques, just south of St. Omer, although they had only opened at Ana Jana a week or ten days earlier. No. 11 C.C.S. from Godewaersvelde joined them at Blendecques at the same time. St. Omer and its vicinity thus became the locality at which most of the casualty clearing stations of the Second Army were being concentrated. No. 11 was transferred from Blendecques to Moulle on the Calais road and No. 17 to Arques Château on the Aire road. No. 18 was at Malassise, between St. Omer and Blendecques, and No. 58 at Longuenesse just outside St. Omer. Both these had been withdrawn to St. Omer by the D.M.S., First Army, from Lapugnoy and Lillers, and together with No. 17 at Arques came under the Second Army when the latter occupied the St. Omer area. No. 1 C.C.S. was also at Arques from the 13th April to 9th May, but was moved into the First Army area at Elnes as already noted.

But in addition to the positions around St. Omer, casualty clearing stations were opened for the Second Army in the area between St. Omer and Bergues in the direction of Dunkerque. No. 3 (Australian) from Nine Elms and No. 2 (Canadian) from Remy Siding were moved back to Esquelbecq in the middle of April, and No. 36 from Roosbrugge, No. 62 from Bandaghem, and No. 64 from Mendinghem to Watten at the end of the month.

When divisions of the French Armée du Nord occupied the front between St. Jans Cappel and Kemmel, the casualty clearing stations at Arneke were in the French Area, but, as the French had then no corresponding units of their own to which they could clear their field ambulances, the four casualty clearing stations there, Nos. 13, 44, 63 and 10, were receiving most of the French as well as British sick and wounded.

A similar situation, as already noted, existed in connexion with French divisions with the Third and Fourth Armies. But the arrangements made with the French D.M.S. in connexion with the latter were not accepted by the D.M.S. of the French Armée du Nord. He was insistent on French personnel taking over British casualty clearing stations with their stores and equipment until a French Hôpital d'Evacuation

ould be established. This led to difficulties, because the casualty clearing stations were required for the British as well as for the French. It was consequently arranged to hand over the whole of No. 63 and No. 13 C.C.Ss. to French personnel, leaving only the Officer Commanding, the quartermaster and a few other ranks R.A.M.C. in charge of the equipment. Difficulties also arose regarding the running of ambulance trains to Arneke, as both British and French had to be evacuated. British ambulance trains were only allowed to run there when convenient to the French authorities and after consultation with them. This situation was rendered more complicated by the fact that, owing to congestion of the railheads in the northern areas of the Second Army, British ambulance trains could not be brought up to Esquelbecq at the beginning of May, and the patients in the casualty clearing stations there had to be brought to Arneke to entrain. A further complication occurred in connexion with the British field stretchers which were being used by the French. These stretchers did not fit into the French ambulance transport and some inches of the handles of many of them were cut off to enable them to be used on the French cars, thus rendering them useless for interchanging with stretchers brought back in British ambulance transport.

On the 30th April a conference was consequently held with the D.Q.M.G., a French representative of General Foch, the British liaison officer of the French Corps H.Q. in the Second Army area, and the D.D.G.M.S., with regard to handing over British casualty clearing stations to the French. It was arranged that the number of British sick and wounded coming into Arneke should be reduced and that only two ambulance trains should be sent there daily for the British and four for the French. The French authorities represented that Arneke was in the centre of their area, and that the railway facilities were not sufficient to allow of a large number of casualty clearing stations remaining there.

The difficult situation was just workable. It was relieved when the XXIInd Corps, whose sick and wounded were being evacuated to the casualty clearing stations in Arneke, was withdrawn from the line on the left of the French divisions. Nos. 44 and 10 C.C.Ss. were then closed; the former being transferred to Bergues on the 9th and the latter to Quäedypre on the 14th May, leaving Nos. 63 and 13 with the French until June, when the former was moved on the 9th of the month to Watten and the latter on the 14th to Holque.

The medical services in the St. Omer and Blendecques area, which had been a district of the lines of communication under the administration of an A.D.M.S., were transferred to the administration of the D.M.S., Second Army, at the end of April, the A D.M.S. continuing under him to administer the area as before. The general hospitals had been withdrawn from St. Omer and its vicinity, namely Nos. 7, 58 and 59, and only two stationary hospitals, Nos. 10 and 4, the latter at Arques, and a voluntary hospital, No. 9 B.R.C.S. (Millicent, Duchess of Sutherland's), together with four casualty clearing stations, No. 18 at Malassise, No. 58 at Longuenesse, No. 11 at Moulle, and No. 17 at Arques, remained under this administration. They served as special hospitals for gassed, N.Y.D.N., infectious, venereal and Chinese labour patients. A voluntary convoy of thirty cars of the First Aid Nursing Yeomanry (F.A.N.Y.) was at the disposal of the A.D.M.S., St. Omer.

The medical situation in the Second Army then was that two corps on the left, the XXIInd and IInd, were sending their wounded to Esquelbecq casualty clearing stations; while Nos. 2 and 15 C.C.Ss. at Ebblinghem were receiving wounded from the XVth Corps on the right, and the two casualty clearing stations at Blendecques the walking wounded, who were being brought back from the main dressing stations by temporary ambulance trains. No. 18 C.C.S. at Malassise was receiving infectious cases, and No. 11 at Moulle Chinese sick. Three casualty clearing stations, Nos. 36, 62 and 64, were opening at Watten; and Nos. 44 and 10 were being transferred from Arneke to the neighbourhood of Bergues. The New Zealand Stationary Hospital at Bourg (Wisques) was for a time being used for venereal patients, but this was stopped, and the venereal patients were sent instead to No. 17 C.C.S. at Arques. The 77th American Division had also at this time come into the army area and its medical units were taking over two field ambulances of the 39th Division for training.

During May the Second Army front was comparatively quiet, although it was frequently bombarded by gas shells and suffered from air raids which caused much damage in the back areas, notably at St. Omer, where No. 10 Stationary Hospital was bombed during the night of the 21st/22nd May, two officers and six other ranks R.A.M.C. and four patients being killed, and eight of the R.A.M.C. and ten patients wounded. No. 10 Stationary Hospital was then closed and was transferred to a safer situation at Clerques. Most of the enemy activity against the front line was directed against the French divisions,

as many as 228 of their officers and 7,156 other ranks having been admitted to Second Army medical units between the date of the arrival of the French divisions in the area and the 22nd May.

In June considerable changes took place in the situation of the medical services of the Second Army. Arrangements were made for the French divisions to be withdrawn towards the end of the month ; the XIXth and Xth Corps joined the Army in their place, and American divisions arrived in back areas for training. Nos. 2 and 15 C.C.Ss. were transferred to the First Army on the 27th June.

The general situation for the disposal of sick and wounded of the Army was then as follows :—

Bergues ..	Nos. 10 and 44 C.C.Ss. for wounded of the IInd Corps.
Esquelbecq	No. 3 (Australian) and No 2 (Canadian) C.C.Ss. for wounded of the XIXth and Xth Corps.
Blendecques	Nos. 1 (Australian) and 2 (Australian) C.C.Ss. for wounded of the XVth Corps.

The other units around St. Omer received the infectious, N.Y.D.N., Chinese labour and venereal cases as before, but gassed cases went to No. 64 C.C.S. at Watten. Nos. 36 and 63 were being moved.

Medical Services of Corps.—The corps of the Second Army which were chiefly engaged during the fighting of April were the IXth and XXIInd. The 25th, 19th, 21st and 9th Divisions of the IXth Corps were on the Wytschaete–Messines front on the 9th April ; but the corps was withdrawn, and the 9th and 21st Divisions were thus transferred to the XXIInd Corps. The remaining divisions then in the corps, 19th, 25th and 34th, were handed over to the VIIIth Corps in reserve on 24th April and the IXth Corps then moved south to the Sixth French Army at Fère-en-Tardenois. On the 16th April the French divisions commenced to take over the area previously occupied by the IXth Corps, between the XVth and XXIInd. Neither the IXth nor the XXIInd Corps divisions were heavily engaged on the 9th April, but subsequently the brunt of the fighting fell on them, and especially on the 25th and 19th Divisions of the IXth Corps on the 10th to 16th April, and on the 9th Division of the XXIInd Corps on the 25th April. The casualties admitted into field ambulances of the 25th Division

during the 10th and 15th April were as follows for each twenty-four hour period from 6 a.m. on 10th to 6 a.m. on the 15th :—

Date.	25th Division.		Other Formations.		Total.	
	Offs.	O.R.	Offs.	O.R.	Offs.	O.R.
10th to 11th	31	992	15	366	46	1,358
11th to 12th	13	320	5	112	18	432
12th to 13th	11	115	35	753	46	868
13th to 14th	5	61	15	259	20	320
14th to 15th	3	43	3	87	6	130

The 25th Division was withdrawn from the line on the 15th April, but moved up to counter-attack at Kemmel on the 26th April. The division joined the IXth Corps at Fère-en-Tardenois on the 8th May.

The 19th Division was actively engaged on the Kemmel front till the 18th April, when its front was taken over by the French 28th Division, but the field ambulances of the 19th Division continued to work for the French until the 21st April. The losses in the medical personnel of this division during these operations were 1 officer and 23 other ranks missing, 10 other ranks killed, and 27 other ranks wounded. Four motor ambulance cars were totally destroyed by shell fire. The other casualties in the division were 33 officers and 872 other ranks admitted to its own field ambulances, and 21 officers and 792 other ranks admitted to field ambulances of other divisions. In addition, 60 officers and 1,952 other ranks from other formations passed through 19th Division field ambulances.

Field ambulances of the divisions of the IXth and XXIInd Corps, as the British front was driven back, were gradually concentrated at Remy Siding. Main dressing stations for stretcher cases were opened there by several divisions. Walking wounded were taken farther north to the casualty clearing station site at Mendinghem. The wounded were admitted into main dressing stations of divisions indiscriminately, and this accounted for the large numbers of wounded of other formations who were received into the field ambulances of the 25th and 19th Divisions.

The 34th Division, which was on the left of the XVth Corps in front of Armentières when the German offensive was

launched, was heavily shelled with gas shells on the 8th April. It was estimated that about 20,000 gas shells were thrown into the town. The main dressing station of the division fell back to No. 2 C.C.S. site at Oultersteene on the 10th April. The wounded and gassed were evacuated through Nieppe. On the night of the 12th/13th the 34th Division relieved the 25th Division and held the line north-east of Bailleul until it in its turn was relieved by French divisions on the 21st April. At Oultersteene a large amount of stores and equipment of the casualty clearing stations had been left behind but much of it was salved by the XVth Corps medical units.

Ambulance Transport during the Offensive.

There were few special incidents in connexion with the work of the ambulance transport of divisions and convoys. The First Army had Nos. 2, 8, 12, 13, and 25 M.A.Cs., and the Second Army Nos. 4, 5, 6, 14 and 20 M.A.Cs. These were distributed to corps or held as Army reserve, and as had now become a recognized custom they were supplemented by lorries for bringing walking wounded back. The light ambulance wagons of the field ambulances were in some cases able to go forward as far as the regimental aid post positions, and much use was also made of the horsed ambulance wagons for the sitting casualties. As in the retreat on the Somme, the roads leading to the fighting line were much less damaged than in those battles in which the British line advanced instead of falling back. The usual complaints were made of the difficulty in getting wounded away from advanced dressing stations when the field ambulance transport was ordered—as they were ordered in one corps—to take the wounded back to casualty clearing station positions instead of to main dressing stations. This procedure was noted in A.Ds.M.S. diaries to interfere seriously with clearing the front areas and was a repetition of what gave rise to similar complaints by divisional A.Ds.M.S. in previous battles, as well as being contrary to the principles laid down by the D.G.M.S. in his memorandum of 2nd April. The depth of the German advance at its farthest point was not more than ten or eleven miles, as compared with forty to fifty in the offensive on the Somme, and consequently the distance from the front line to the casualty clearing stations in the back area became relatively greater when the advance was checked.

The Casualties.

The casualties admitted into the medical units of the First and Second Armies from the 8th April onwards are shown in the following table.

Casualties admitted to First and Second Army medical units during the Lys Offensive in April.

Date.	Field Ambulances.		Casualty Clearing Stations.	
	First Army.	Second Army.	First Army.	Second Army.
1918.				
8th April	1,354	28	1,642	61
9th ,, ...	3,426	63	3,797	636
10th ,, ...	?	1,391	2,506	3,321
11th ,, ...	2,271	1,296	2,271	4,198
12th ,, ...	?	?	1,759	3,580
13th ,, ...	?	?	862	2,840
14th ,, ...	?	?	638	1,666
15th ,, ...	?	?	710	1,444
16th ,, ...	?	?	328	2,527
17th ,, ...	?	2,362	400	2,987
18th ,, ...	?	1,146	1,419	1,869
19th ,, ...	?	516	483	748
20th ,, ...	?	412	467	546
21st ,, ...	523	530	458	593
22nd ,, ...	635	368	720	553
23rd ,, ...	566	456	599	673
24th ,, ...	512	365	587	823
25th ,, ...	496	720	520	4,064
26th ,, ...	395	1,317	446	2,446
27th ,, ...	?	845	199	1,755
28th ,, ...	?	598	439	712
29th ,, ...	319	1,640	378	2,000
30th ,, ...	?	378	246	769

The large number of casualties in the First Army on the 8th April was mainly due to the gas attack on the 34th Division on the Armentières front. Afterwards, what had been the normal line of evacuation of the 34th and 40th Divisions of the XVth Corps, namely, to casualty clearing stations at Haverskerque, became a line running parallel to the line of the enemy's advance, and consequently the wounded of the XVth Corps divisions had then to be evacuated in the direction of Hazebrouck, Godewaersvelde, or Remy Siding, the main dressing stations retiring in the same direction, at first towards Oultersteene. This fact accounts for the comparatively

large number of wounded received into the Second Army casualty clearing stations after the 9th April. Thus the 40th Division, which was in the XVth Corps until the 12th April, and the XIth Corps until the 14th, had collected some 1,596 wounded, who were evacuated to Hazebrouck or northwards to Remy Siding between the 9th and 14th April.

On the Aire–La Bassée Canal front the direction of evacuation was at first through main dressing stations in the Séminaire St. Vaast at Bethune, until they were shelled out on the 10th April, and afterwards through Chocques to the casualty clearing stations at Lozinghem and Pernes. The XIth Corps front at the point of the salient was cleared through main dressing stations at Busnes and Ham-en-Artois in the direction of St. Omer and Pernes. The medical units of the 55th Division, which held its ground along the La Bassée Canal, received most of the wounded from the southern area. Between the 9th and 16th April its field ambulances admitted a total of 119 wounded officers and 2,403 other ranks, of whom 47 officers and 1,032 other ranks belonged to other divisions.

Casualties amongst the Civil Population.

In reviewing the work of the medical services during the Lys offensive certain features stand out in contrast with the work of the medical services in the Somme offensive during the previous month. The Fifth and Third Armies went back under the enemy pressure in March over the devastated area of the Somme battles of 1916; whereas the area through which the enemy forced back the British, Portuguese and French in the First and Second Army areas in April had been more or less undamaged by battle since the British occupied the line between Armentières and the Aire–La Bassée Canal in 1914. There were many towns and villages in this area, and few of the civil inhabitants had left their homes. Consequently Bethune, Estaires, Merville, Armentières and numerous villages were full of old men, women and children when the German attack was launched. It thus happened that when these places were shelled and bombed, and more especially when enormous numbers of gas shells were thrown into Armentières and Bethune, the casualties amongst the civil inhabitants were extremely numerous and distressing. British medical units and ambulance convoys at once came to their assistance, and were actively engaged in bringing the sick, wounded and helpless

civilians back to places of safety. For example, No. 1 M.A.C. had been sent up to Bethune from G.H.Q. by the D.G.M.S. and brought back a large number to the French hospitals at Hesdin. Again, St. Venant Asylum, whose director, Dr. Cortyl, had throughout the war been indefatigable in providing accommodation for and assisting the Indian, British and Portuguese casualty clearing stations which occupied in turn a portion of the buildings, was full of insane women. It was being heavily shelled and had become untenable, except by an advanced dressing station. The 61st Division had opened a main dressing station there on the 12th April, but had to withdraw it on the following day. There were then 870 mental cases in the asylum together with the staff, and some 60 women and children in a neighbouring hospice. These were all evacuated under the supervision of the D.D.M.S. of the XIth Corps. They were taken from St. Venant in lorries and entrained at Berguette between 1 a.m. and 9.30 a.m. on the 15th April.

As an instance of how little did the inhabitants of the villages in the area of the 55th Division anticipate the impending disaster, the A.D.M.S. of the Division notes that he had to clear bedridden civilians from cellars in the Château of La Gorre on the canal in front of Bethune on the 11th April, at a time when his regimental aid posts and advanced dressing stations were strung out along the Canal between Bethune and Givenchy.

CHAPTER XVI.

THE BRITISH MEDICAL SERVICES WITH THE FRENCH ON THE AISNE AND THE MARNE, MAY TO AUGUST 1918.

WHILE the German offensives were being made on the British line in front of Hazebrouck from April to June 1918, there was considerable activity farther south. Severe fighting took place around Villers Bretonneux on the 24th and 25th April, in which the elements of the 18th and 8th Divisions of the IIIrd Corps on the right and of the 3rd and 4th Australian Divisions of the Australian Corps in the centre and on the left were engaged. The Fourth Army, in which these corps were at the time, had its casualty clearing stations along the Somme Valley between Amiens and Abbeville, chiefly at Longpré, Picquigny, Pernois, Crouy and Vignacourt. The number of wounded was comparatively small and the general organization and scheme for their collection and evacuation presented no difficulties.

The German Offensive on the Aisne.

A different situation, however, arose in connexion with the British divisions of the IXth Corps which formed part of the Sixth French Army on the Aisne front. These divisions had passed through a period of severe fighting and had been transferred to a quiet area for rest and training in exchange for the French divisions sent to support the right of the British line on the Flanders front. Three of the divisions, the 21st, 8th and 50th, were put into the French front line, during the first fortnight of May, on a front of about fifteen miles between Bermicourt and Bouconville, north-west of Rheims. The 25th Division was in reserve. The French Sixth Army was attacked by overwhelming numbers from Rheims to Soissons at 1 a.m. of the 27th May. The whole of the IXth Corps front was thus involved, as well as the French Corps holding the Chemin des Dames on its left. The fighting continued for several days, all the divisions of the IXth Corps being engaged. The line was forced back to the Marne, the IXth Corps being pressed back on the centre and left " to a position

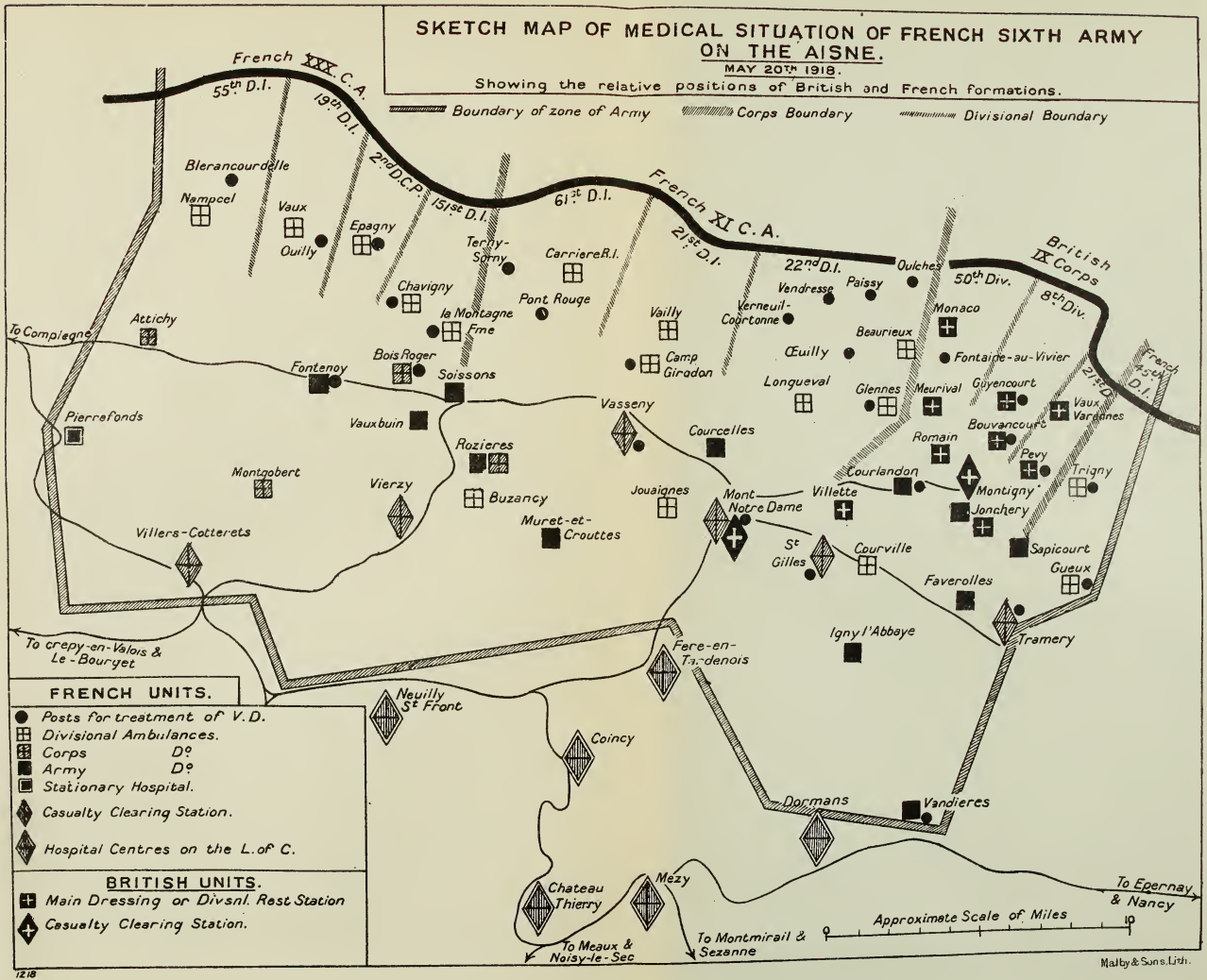
facing west and north-west between the Aisne and the Vesle."* On the 28th May the corps retired across the Vesle and Ardres. The 19th Division, which had been with the VIIIth Corps in reserve, was then brought up in buses to fill the gap between the IXth Corps and French on its left. The British divisions then came under the command of the French Fifth Army and withdrew to the line Aubilly–Chambrecq–Boujacourt.

The Medical Services of the IXth Corps during the German Offensive on the Aisne.

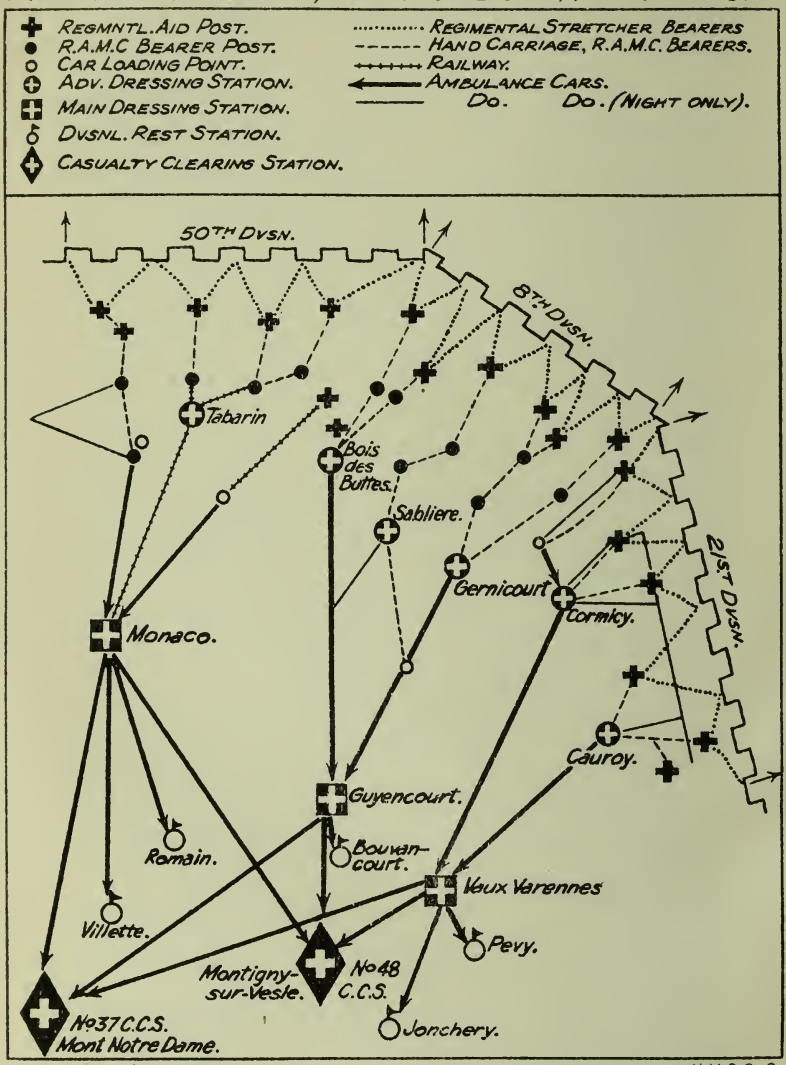
The medical services with the IXth Corps during these operations were administered by Colonel R. J. Blackham, who had succeeded Colonel J. B. Wilson as D.D.M.S. of the Corps on the 17th May. He had with him two casualty clearing stations, the 37th and the 48th, the former from Italy under Lieut-Colonel Gray, and the latter, under Lieut.-Colonel Henchley, from Ytres after it had been refitted at Boulogne. The D.D.M.S.'s office was opened at Fère-en-Tardenois on the 27th April. No. 37 C.C.S. was placed in huts in a section of a French Hôpital d'Evacuation at Mont Notre Dame on the following day, but infectious cases were sent to French medical units at Jouaignes or Igny l'Abbaye, and continued to be sent there. No. 48 C.C.S. left Boulogne on the 16th May and arrived on the 19th at Montigny-sur-Vesle, where it also took over a part of a French Hôpital d'Evacuation. It opened for admission of patients on the 23rd May.

In anticipation of the attack, Colonel Blackham had prepared a well thought out scheme under the administrative control of the D.M.S. of the French Sixth Army. He did not hear of the impending attack, however, till 6 p.m. of the 26th May. He then met the A.Ds.M.S. of divisions and the officers commanding the casualty clearing stations and other medical units. A.Ds.M.S. were instructed to work their field ambulances in échelon and be prepared to move back rapidly in the case of a hostile advance. This échelon scheme was designed to bring the main dressing stations gradually back to and behind the divisional rest stations. The main dressing stations would thus be established in échelons, and as each field ambulance retired it formed a new post to which wounded were taken for evacuation farther back. An important instruction was that the divisional motor ambulance cars were not to proceed farther back than these main dressing station positions.

* Sir Douglas Haig's despatches, p. 253.


SKETCH MAP OF MEDICAL SITUATION OF FRENCH SIXTH ARMY ON THE AISNE.
MAY 20th 1918.
Showing the relative positions of British and French formations.
Boundary of zone of Army
Corps Boundary
Divisional Boundary
French XXX. C.A.
55th D.I.
19th D.I.
2nd D.C.P.
151st D.I.
61st D.I.
French XI C.A.
21st D.I.
22nd D.I.
British IX Corps
50th Div.
8th Div.
French 10th C.A.
21st D.I.
Blerancourdelle
Nampcel
Vaux
Ouilly
Epagny
Chavigny
Terny-Sorny
Carriere R.I.
Pont Rouge
la Montagne Fme
Vailly
Camp Giradon
Oulches
Vendresse
Paissy
Verneuil-Courtonne
Monaco
Beaurieux
Œuilly
Fontaine-au-Vivier
Longueval
Glennes
Meurival
Guyencourt
Vaux Varennes
Bouvancourt
Romain
Pevy
Trigny
Courlandon
Montigny
Jonchery
Villette
Mont Notre Dame
St Gilles
Courville
Sapicourt
Gueux
Faverolles
Tramery
Igny l'Abbaye
Fere-en-Tardenois
Jouaignes
Courcelles
Vasseny
Vauxbuin
Soissons
Bois Roger
Fontenoy
Attichy
To Compiegne
Pierrefonds
Rozieres
Buzancy
Vierzy
Montgobert
Muret-et-Crouttes
Villers-Cotterets
To crepy-en-Valois & Le-Bourget
Neuilly St Front
Coincy
Dormans
Vandieres
Chateau Thierry
Mezy
To Meaux & Noisy-le-Sec
To Montmirail & Sezanne
To Epernay & Nancy
Approximate Scale of Miles
0
10
FRENCH UNITS.
Posts for treatment of V.D.
Divisional Ambulances.
Corps Dº
Army Dº
Stationary Hospital.
Casualty Clearing Station.
Hospital Centres on the L. of C.
BRITISH UNITS.
Main Dressing or Divsnl. Rest Station
Casualty Clearing Station.
1218
Malby & Sons, Lith.

MEDICAL SITUATION OF THE BRITISH IX CORPS WITH THE SIXTH FRENCH ARMY ON THE AISNE, GERMAN OFFENSIVE, MAY 27TH 1918.



13.2848 C.5060/141. 1500. 11.23. H.M.S.O., Cr.

The motor ambulance convoys at Colonel Blackham's disposal for evacuating from the main dressing stations to the casualty clearing stations were No. 31, which was with him from the 4th May, and No. 42, which arrived from the lines of communication on the 28th May in response to a message sent on the night of the 26th May for an additional motor ambulance convoy. A lorry convoy of thirty lorries had also been organized and placed under an officer of the R.A.M.C.

Arrangements had been made with the French for British ambulance trains to run to the British casualty clearing stations, but the arrangements had not come into effect when the operations commenced. A telegram was sent to G.H.Q. at 8 p.m. on the 26th asking for two trains to be sent to the corps area at once and for six others to be within reach. The Q.M.G. at G.H.Q. had informed the IXth Corps Commander that there should be no difficulty in getting eight ambulance trains up every twenty-four hours, but asked that the details should be arranged with the French Sixth Army.

The instructions to the casualty clearing stations were to clear the walking wounded first, and to have their equipment ready for transport back by train or lorry. The personnel of the casualty clearing stations were given a rendezvous at Fère-en-Tardenois in the event of their having to withdraw.

No. 17 Advanced Depôt of Medical Stores, which had arrived in the IXth Corps area on the 10th May and had been established with No. 37 C.C.S. at Mont Notre Dame, was given the same rendezvous in the event of a retirement being necessary.

The other medical units with the corps were No. 16 (Bacteriological) and No. 22 (Hygiene) Mobile Laboratories. The former was with No. 37 C.C.S. and the latter with No. 48 C.C.S. There were also an X-ray unit with No. 48 C.C.S. and a dental unit with No. 37.

The IXth Corps medical units were thus either at Mont Notre Dame behind the left, or at Montigny-sur-Vesle behind the right of the IXth Corps front, at a distance of some seventeen and seven miles respectively from the front line. The divisional medical units and two sanitary sections, Nos. 45 and 119, were occupying various villages between them and the front. It should be noted, however, that Mont Notre Dame was outside the area assigned to the IXth Corps by the staff of the French Sixth Army, who had fixed the localities to which the casualty clearing stations should be sent.

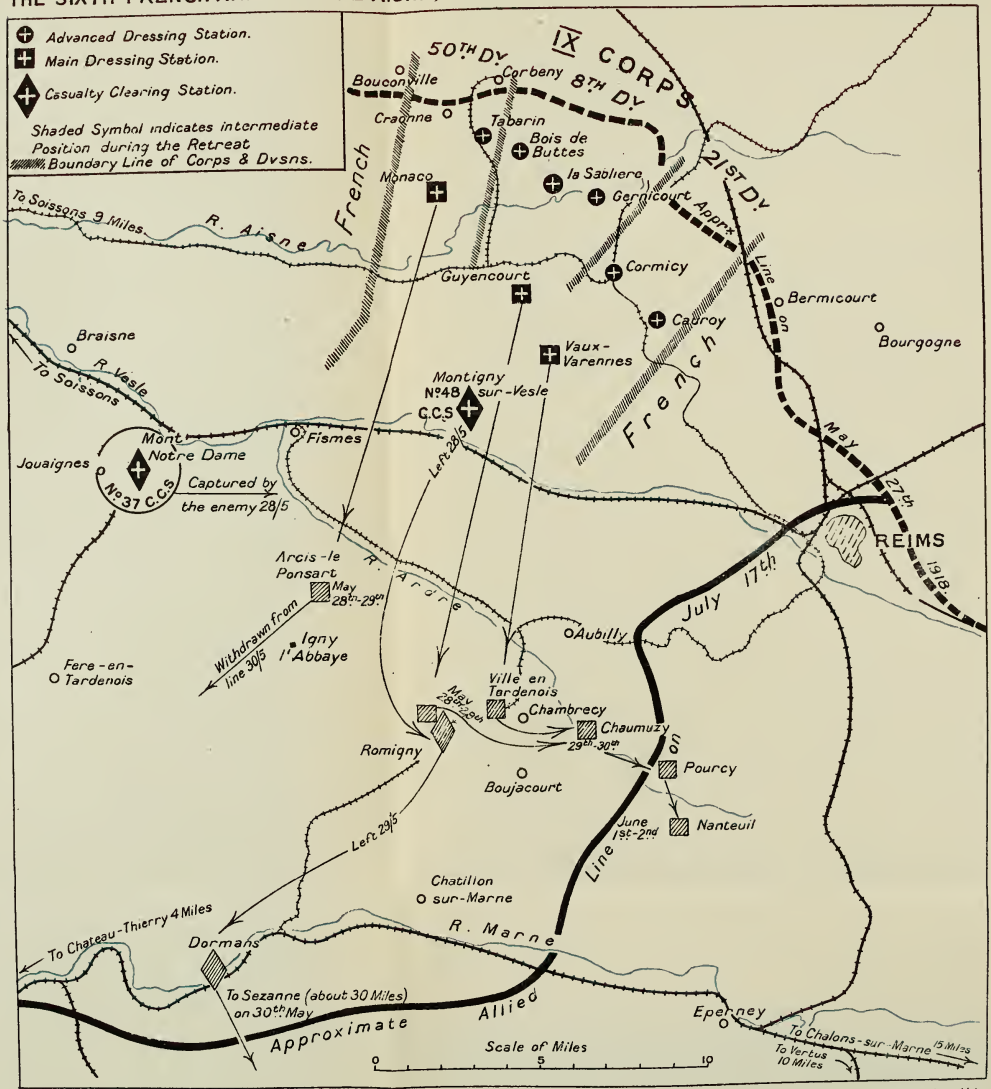
When the attack commenced steps were taken at once to withdraw No. 48 C.C.S., as it was nearest the line, but only two lorry loads were got away to Fère-en-Tardenois, about thirty miles behind the line. Wounded poured into No. 48 C.C.S. during the day. Five hundred were evacuated by a French ambulance train at 1 p.m. The train got away just before the line was cut at Fismes. About 1,500 patients were dealt with and cleared from this casualty clearing station up to 6 a.m. on the 28th May. The unit was then abandoned, the entire personnel and lorries escaping before the position was captured. Forty severely wounded had to be left behind.

The rapid advance of the enemy towards Mont Notre Dame was unforeseen and came as a surprise. The railway line was cut at 10 p.m. on the 27th May, so that evacuation by ambulance train was impossible, but a French ambulance train had already cleared 500 British wounded from No. 37 C.C.S. The walking wounded were sent to Fère-en-Tardenois, and arrangements were made to send off in cars and lorries whatever material and personnel could be spared from the service of the wounded. These arrangements, however, fell through, as the Germans entered the hospital at 1.30 a.m. on the 28th May and all communications were broken. The whole of the British and French casualty clearing stations and their wounded were thus captured together with their personnel. Four R.A.M.C. officers, one dental surgeon, three chaplains and six other ranks of No. 37 C.C.S., however, got away. The Commanding Officer, Lieut-Colonel Gray, four other R.A.M.C. officers, the Quartermaster and the rest of the unit remained with the wounded. No. 17 Advanced Depôt of Medical Stores was also captured. The other units got away to the rendezvous at Fère-en-Tardenois.

After these events and until the German advance was checked, British wounded were received into French hospitals during the different stages of the retreat, the personnel of No. 37 and No. 48 C.C.Ss. or of a field ambulance being attached for duty in them. The evacuation hospitals were thus successively at Dormans on the 28th May, Château-Thierry, Dormans and Epernay on the 29th, Dormans, Epernay and Vertus on the 30th, Epernay and Vertus on the 1st and Vertus on the 2nd June.

British ambulance trains were able to come up to clear the British wounded from Dormans on the 29th May, but throughout the operations many of the wounded were cleared

SKETCH MAP OF THE MEDICAL SITUATION OF THE BRITISH IX CORPS WITH THE SIXTH FRENCH ARMY ON THE AISNE, DURING THE GERMAN OFFENSIVE, MAY-JUNE 1918.



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by the French in cars and ambulance trains in a southerly direction to French hospitals, their destination being determined by the French authorities.

The VIIIth Corps was in reserve behind the IXth Corps with headquarters at Chalons-sur-Marne during these operations. No. 62 C.C.S. was established with it at Bussy-le-Château, and on the 9th June, No. 32 C.C.S. was sent up and opened under the IXth Corps administration at Sezanne. Wounded were taken to the former by motor transport from Epernay on the 29th and 30th May, and to the latter both by ambulance transport and ambulance trains at a later date.

The situation and movements of the medical units and the evacuation of sick and wounded from them may be followed from the sketch maps.

The chief difficulties were the short notice of the attack, lack of information during the battle, and the rapidity of the enemy's movements. The D.D.M.S. of the IXth Corps received information of the impending attack less than eight hours before it took place. At that time the field ambulances were in buildings or huts which had been taken over from the French when the British divisions went into the line. The accommodation in them was so good and ample that divisions were inclined to retain in them as many cases of sickness as possible in order to avoid wastage. The result of this was that 1,023 sick were in the divisional areas when notice of the attack was received. Many were at once returned to duty, but the casualty clearing stations were immediately filled with and hampered by the reception of some 400 or 500 of these cases. Further, No. 37 C.C.S. was outside the corps boundary, and the D.D.M.S. was not aware of its position being threatened until 6 p.m. of the 27th May. Attempts then to communicate with it failed owing to the enemy having come between it and corps headquarters. The D.D.M.S., in ignorance, therefore, of what was happening on the left flank, concentrated his attention on clearing No. 48 C.C.S. which was much nearer the front line. No. 37 C.C.S. was so far back that it seemed inconceivable that its position would be threatened during the first twenty-four hours. The advance of the Germans of twenty-nine miles in one day was in fact entirely outside the experience of the offensives against the British fronts on the Somme and the Lys.

The number of wounded and sick received into the field ambulances and casualty clearing stations of the IXth Corps

from the 27th May to 19th June was as follows, exclusive of those in No. 37 C.C.S. at the time of capture :—

	Sick.		Wounded.	
	Offs.	O.R.	Offs.	O.R.
Field ambulances	116	2,122	170	4,457
Casualty clearing stations	88	1,947	170	4,292

The motor ambulance convoys cleared 8,102 and ambulance trains 11,944; of whom 6,517 went to British hospitals at Rouen and the others to French hospitals in various parts of France. No. 31 M.A.C. had the greatest strain thrown on it during the first two days, until it was relieved by No. 42 M.A.C. The numbers missing were reported to be 773 officers and 11,147 other ranks, and the numbers killed, 98 officers and 454 other ranks.

The losses in medical personnel were correspondingly great. They were as follows :—

	Killed.	Wounded.	Missing.
Officers	3	4	45
Other ranks	15	80	497

The missing included the A.D.M.S., Colonel Milne-Thompson, of the 50th Division and his D.A.D.M.S.

The loss in British medical equipment and stores was not so great, as much of the equipment used belonged to the French medical units in the localities taken over by the British. No. 25 Field Ambulance of the 8th Division, No. 37 C.C.S. and No. 17 Advanced Depôt of Medical Stores were in fact the only units which were captured intact. The losses in ambulance transport between the 27th May and 2nd June were, however, considerable. The 50th Division lost twelve of its motor ambulance cars, the 8th Division eleven, and the 21st and 25th Divisions one each. No. 31 M.A.C. lost seven cars. Five horsed ambulance wagons were also lost, three in the 8th Division and two in the 21st. There was also a loss of twenty-five stretcher carriers in the divisions.

While the IXth Corps was thus engaged with the French on the Aisne front, the VIIIth Corps with the 19th Division only had its headquarters at Chalons-sur-Marne, where its

D.D.M.S., Colonel Shanahan, was in close touch with the administrative medical officers of the French Fourth Army. The A.D.M.S. of the 19th Division had opened his office at St. Germain la Ville. No. 62 C.C.S., which had been sent to the French front with the VIIIth Corps, after several sites had been proposed was eventually placed in a French hospital at Bussy-le-Château. No. 11 M.A.C., No. 19 Advanced Depôt of Medical Stores and No. 14 X-ray Unit were also with the VIIIth Corps at this time. The 19th Division was transferred to the IXth Corps on the 28th May, as noted above. Many British wounded from the Aisne front were then being received into French hospitals at Chalons, and the D.D.M.S. of the VIIIth Corps had his time occupied in arranging for their transfer to No. 62 C.C.S. This was carried out by No. 11 M.A.C.

On the 4th June No. 19 Advanced Depôt of Medical Stores was transferred from the VIIIth to the IXth Corps and placed at Sezanne.

In order to co-ordinate the work of the British units in the French areas a G.H.Q. (South) was now formed, and on the 5th June Colonel Shanahan, the D.D.M.S. of the VIIIth Corps,* was appointed D.D.M.S. at this G.H.Q. for administering the British medical services. His headquarters were at La Ferté Gaucher.

The Medical Situation after the German Offensive.

The IXth Corps remained with the French on the Marne front until the 5th July, when it was transferred to the Fourth Army and occupied the area behind the junction of the French and British on the Amiens front, replacing the XXIInd Corps, which was then transferred to the area previously occupied by the IXth Corps on the Marne. No. 32 C.C.S. had been sent to the IXth Corps area, after having been refitted at Etaples, on the 9th June, and was established at Sezanne, with the personnel of No. 48 C.C.S. attached to it. On the 25th June, No. 48 C.C.S. was sent to Rouen to refit, and No. 32 C.C.S. was transferred to the reconstituted Fifth Army and opened at Elnes near St. Omer. No. 62 C.C.S. was transferred to the Second Army and went to Arneke. No. 31 M.A.C.

* The VIIIth Corps left for Long, eight miles east of Abbeville, in the Fourth Army back area, on the 15th June, where the 8th and 21st Divisions came under its administration. No. 62 C.C.S. was, however, left with the IXth Corps at Bussy-le-Château. On the 24th June the VIIIth Corps as a corps was broken up and ceased to function.

went to the First Army and No. 42 M.A.C. to G.H.Q. (Hesdin). No British medical units were thus left with the French on the departure of the IXth Corps. Consequently, when the XXIInd Corps arrived about fourteen days later it brought with it fresh medical units. Its divisions were the 51st and 62nd. No. 48 C.C.S., after being re-equipped at Rouen, joined it at Vertus on the 21st July. No. 50, which had been refitting at Etaples after the Somme offensive, was also sent to the XXIInd Corps and opened at Sezanne on the 19th July. It had with it No. 31 Advanced Depôt of Medical Stores and No. 13 Mobile X-ray Unit. Nos. 42 and 44 M.A.Cs. were also attached to the XXIInd Corps in July, but the latter was held in reserve by the D.D.M.S., G.H.Q. (South).

Two British divisions, the 15th and 34th, were attached to the French Groupe d'Armées de Reserve (G.A.R.) formed of the French Third and Tenth Armies. Both divisions were placed with the Tenth Army, the 15th with the French XXme Corps d'Armée, and the 34th with the XXXme Corps d'Armée. Nos. 16 and 17 M.A.Cs., No. 63 C.C.S. and No. 3 Advanced Depôt of Medical Stores were sent to work with them, the two latter units to Senlis. They were thus in the area behind the Forests of Compiègne and Villers Cotterets. The medical administration of the XXIInd Corps and the British units with the G.A.R. was then co-ordinated by the D.D.M.S., G.H.Q. (South), at La Ferté Gaucher. Colonel C. E. Pollock had at that time replaced Colonel Shanahan, but a D.D.M.S., Colonel T. P. Jones, was appointed specially as D.D.M.S. of the British Forces with the French G.A.R. owing to the distance between the XXIInd Corps units and the 15th and 34th Divisions. His headquarters were at Creil. For general administration he came under Colonel Pollock, but he did not take up his appointment until the 25th July. Up till then the arrangements for medical units behind the 15th and 34th Divisions were being made by Colonel S. Gallie, from the L. of C., under Colonel Pollock's direction.

The French Offensive on the Marne.

After the close of the operations in which the IXth Corps had been engaged, the allied counter-offensive, which marked the commencement of the advance to victory, was launched by the French Groupe d'Armées de Reserve "on the front between Château Thierry and Soissons," supported "by vigorous attacks on other parts of the German Salient."*

* Sir Douglas Haig's despatches, p. 255.

The 51st and 62nd Divisions of the XXIInd Corps and the 15th and 34th Divisions with the French Tenth Army were involved in these attacks on the right and left of the French main attack. The XXIInd Corps had just arrived at Vertus when the operations commenced. The 51st and 62nd Divisions went into the line on the 19th July, and attacked at dawn the following day. The fighting continued on this front till the 28th July, and resulted in the recovery of the positions from which the IXth Corps had withdrawn in the previous fighting at the end of May and beginning of June. The divisions were then relieved and entrained with the XXIInd Corps for the British zone between the 2nd and 4th August.

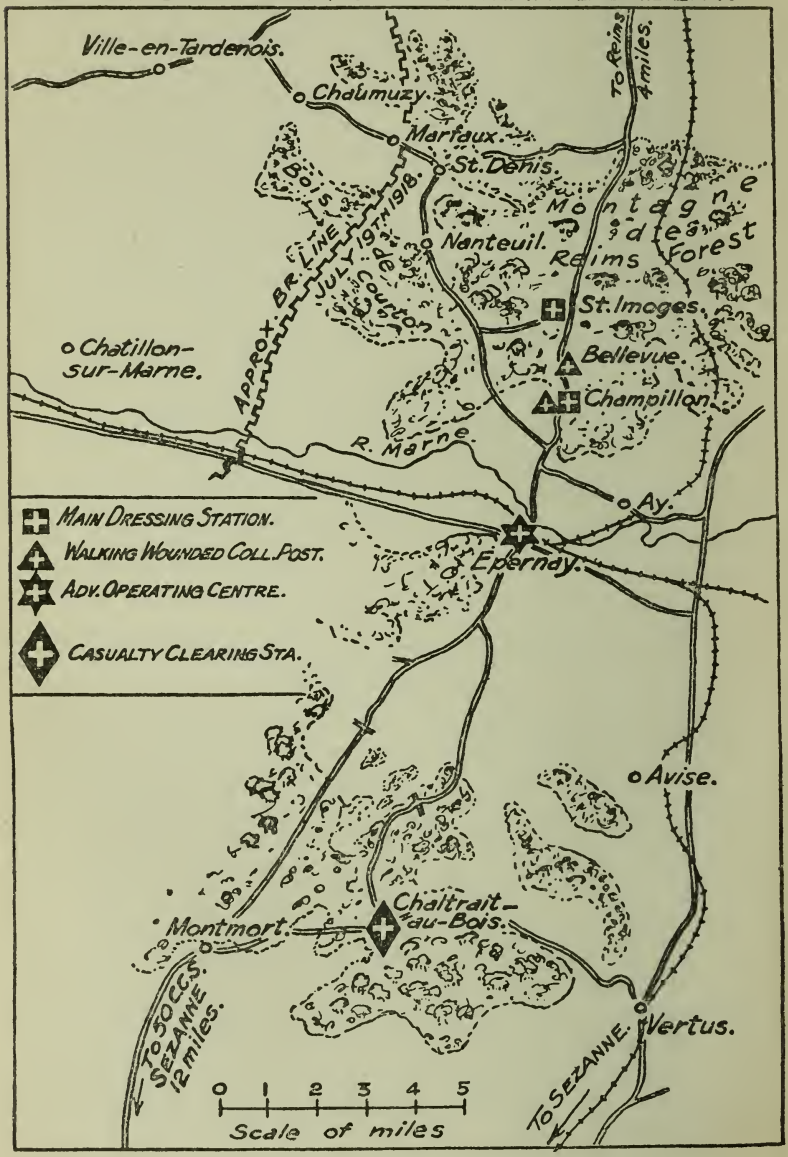
The two British divisions, the 15th and 34th, with the French Tenth Army went into the line on the night of the 22nd/23rd July, and attacked on the left flank of the salient at Berzy-le-Sec and Parcy Tigny, south-west of Soissons. They continued operations in that area. The fighting was especially heavy on the morning of the 29th July at Buzancy, when the 34th Division was moved southwards to a line facing Oulchy-la-Ville, and the 15th Division to a line in front of Villemontoire. The attack was continued in that area on the morning of the 1st August. The divisions were relieved on the night of the 3rd/4th August and entrained for the British zone on the 5th August.

The Medical Services with the XXIInd Corps during the French Offensive.

The medical arrangements of the XXIInd Corps during these operations are indicated in the sketch map on the next page.

No. 50 C.C.S. arrived at Sezanne with mobilization equipment only, that is, for 200 beds, but this was supplemented by the French. No. 48 C.C.S. at first went to Vertus, but on the 24th July a detachment was sent to the Hôpital Auban Moet, Epernay, to form an advanced operating centre, in conjunction with a field ambulance already there. The remainder of No. 48 then took over a hospital at Chaltrait-au-Bois of 300 beds from the Italians, who with American troops were also with the French armies in Champagne. This hospital was between Vertus and Montmort, nine miles south of Epernay, and was used for walking wounded, gassed cases and sick. Sezanne was still farther south, about fifteen miles from Epernay.

SKETCH MAP SHOWING POSITIONS OF MEDICAL POSTS OF THE 51ST & 62ND DVSNS. (XXII CORPS) WITH THE SIXTH FRENCH ARMY, DURING OPERATIONS OF JULY 1918, ON THE EASTERN FLANK OF THE MARNE SALIENT.



The Casualties.—The number of wounded collected by the divisions of the XXIInd Corps between the 20th and 29th July is not very clearly recorded, but the D.D.M.S. of the corps notes the following as having been evacuated from the field ambulances to casualty clearing stations from the 21st July onwards :—

21st July	1,312
22nd ,, ...	819
23rd ,, ...	415
24th ,, ...	953
25th ,, ...	180
26th ,, ...	72
27th ,, ...	102
28th ,, ...	367
29th ,, ...	367
30th ,, ...	148
31st ,, ...	157

The main dressing station of the 51st Division records the admissions of 101 officers and 1,466 other ranks between the 20th and 31st July, and the main dressing station of the 62nd Division 2,077.

The two motor ambulance convoys, Nos. 42 and 44, were working from Epernay and Vertus in evacuating wounded from the main dressing stations to Nos. 48 and 50 C.C.Ss. The French also provided a number of lorries for the evacuation of walking wounded.

Some of the British casualties were also taken by an American ambulance train to an American hospital in Paris on the 23rd July.

The whole of the arrangements for clearing the casualty clearing stations was controlled by the French authorities. Both British and French ambulance trains were employed. While the British trains ran from the front to Rouen, the French trains took the wounded to various French hospitals at Chalons, Bar-le-duc and elsewhere, but chiefly to Troyes, which was only some thirty miles south of Sezanne. The A.D.M.S., Colonel Statham, of the British Paris administrative area, was in close liaison with Colonel Pollock, the D.D.M.S., G.H.Q. (South), and the movements of the British sick and wounded to Troyes and elsewhere were regulated in such a manner that transfer from the French hospitals to Rouen was being continuously effected.

Colonel Owen Richards was attached to G.H.Q (South) as consulting surgeon during the operations. Surgical teams and nursing sisters were brought up to No. 48 C.C.S. advanced operating centre at Epernay, the latter on the 29th July. At No. 50 C.C.S. much assistance was given by the French operating surgeons, and also by women drivers of a convoy of the First Aid Nursing Yeomanry working with the French, who took on duties of nursing at the casualty clearing station.

The Work of the Field Ambulances.—The two casualty clearing stations and the motor ambulance convoys were not ready for work on the night of the 19th/20th July. Consequently the tent division of a field ambulance of the 62nd Division acted as a casualty clearing station at Sezanne and the tent division of a field ambulance of the 51st Division at Auban Moet, Epernay, during the 20th July. The main dressing stations of the 62nd Division were at St. Imoges, with a walking wounded dressing station at Champillon. The motor ambulance convoy cars began to work during the afternoon of the 20th, but were not in full working order till the 22nd. Consequently considerable numbers of the lying down wounded were held up at St. Imoges till then.

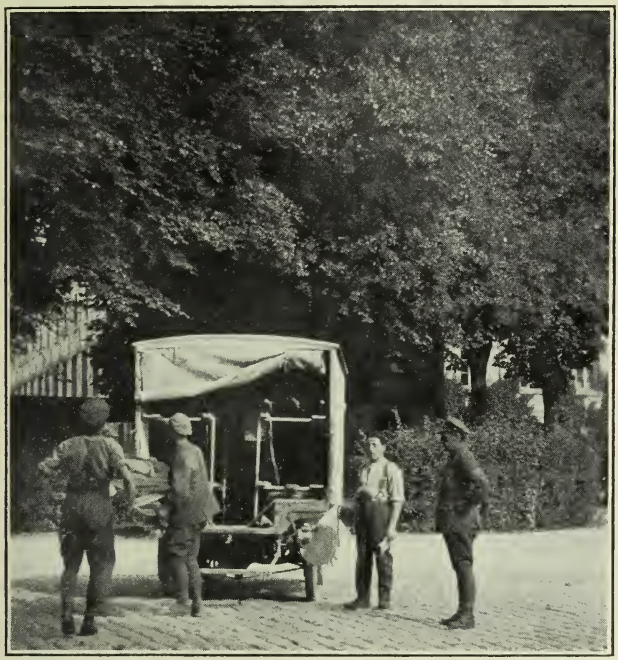
In the absence of an advanced depôt of medical stores at the commencement of the operations, there was difficulty in maintaining an adequate supply of dressings, splints and anti-tetanic serum at the main dressing stations, but much assistance was obtained from the French.

The country was thickly wooded, and while this allowed ambulance cars to come up, free from enemy observation, much farther forward than on previous occasions, the bearers found it specially difficult to find their way in the forest country. Bandages were tied round the trees to mark the routes for the stretcher bearers and walking wounded and this proved a very effective and valuable method in wood fighting.

The regimental aid posts of the 51st Division were in the Bois de Courton on the 20th July, with collecting posts to which the cars could come up at Courton Ruine on the left and at a hill outside Nanteuil on the right. The advanced dressing station was at St. Imoges, and the main dressing station at Champillon. During the fighting the collecting posts to which cars could run advanced to St. Denis, then to Marfaux, and finally to Chaumuzy. Two or more relays of bearers worked through the wood to these car posts. The main dressing station advanced to St. Imoges and the advanced dressing station to Nanteuil.

The British Medical Services with the French Tenth Army during the Offensive.

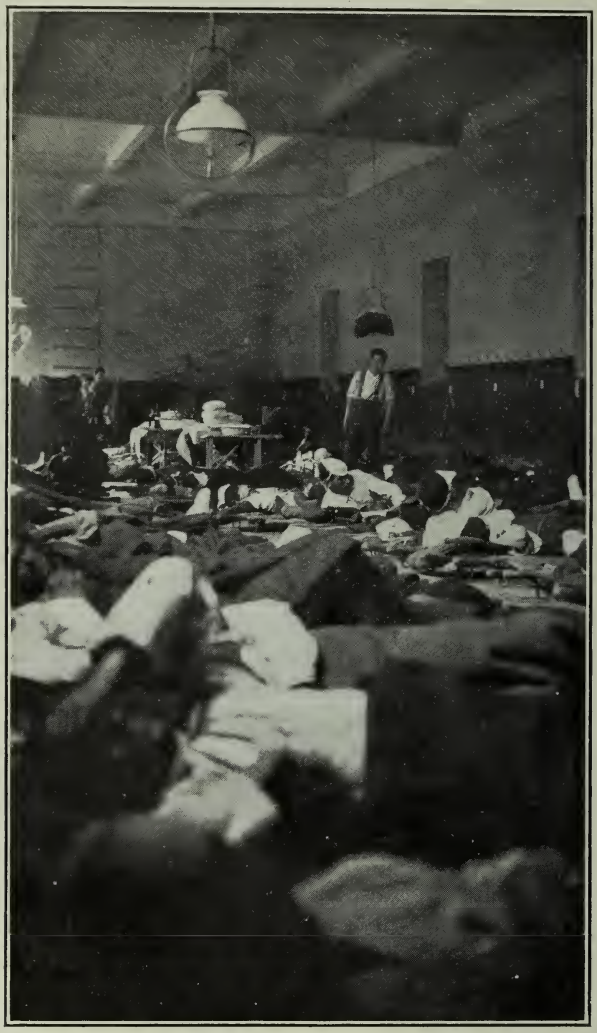
When the 15th and 34th Divisions with the French Tenth Army attacked on the morning of the 23rd July they were separated from one another by two French divisions, so that it was difficult to co-ordinate the arrangements for the evacuation of their wounded.



At No. 63 Casualty Clearing Station, Senlis, 1918.

No. 63 C.C.S. detrained at Senlis on the night of the 22nd/23rd July. It opened in the College St. Vincent, Senlis, and was ready to receive the first convoy of wounded which arrived at 6 a.m. on the 23rd. It had been fully equipped by the French, had accommodation for over 1,000 patients, and was also conveniently near the railway station from which ambulance trains ran direct to Rouen. Twelve French voluntary aid nurses continued to serve in it, and were of great assistance to the British nursing sisters of the unit. As this was the only casualty clearing station serving the two divisions the work

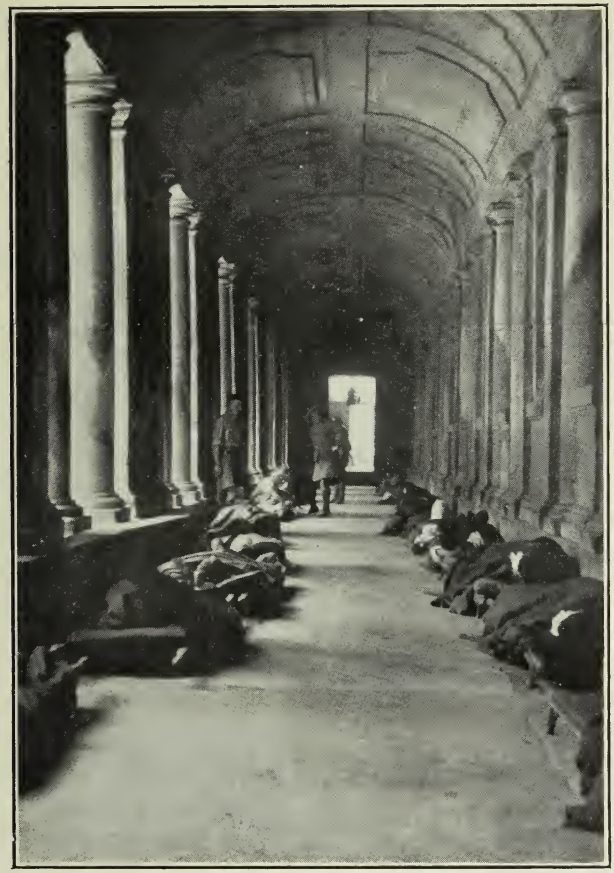
was very heavy, especially in connexion with the unloading of cars and entraining wounded. Consequently, fifty men of



"Gas" ward in No. 63 Casualty Clearing Station, Senlis, July 1918.

the R.A.M.C. from field ambulances, fifty V.D. convalescents, and forty-two other convalescents were attached to the unit to assist in this work on the 26th and 28th July.

A walking wounded post for both divisions was established at Halte St. Remy, three-quarters of a mile from Villers Cotterets on the road to Puiseux. A tent sub-division from each of the two divisions was stationed there with twenty marquees from No. 63 C.C.S.



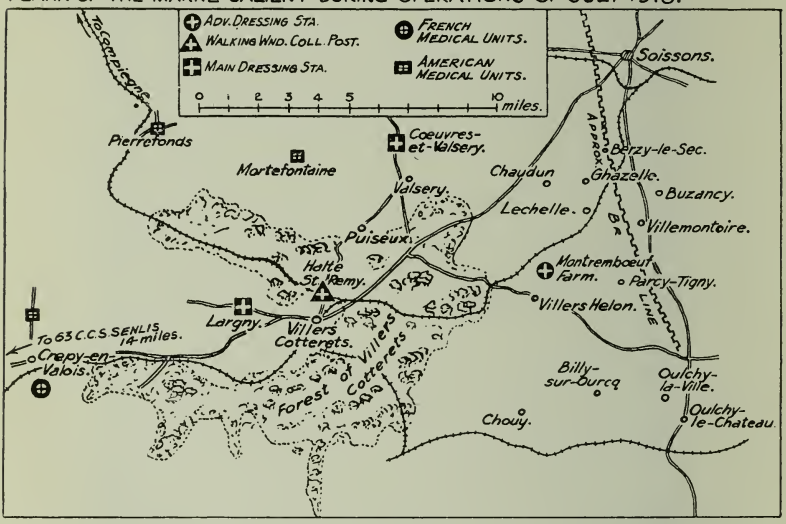
Corridor at College St. Vincent, Senlis,
No. 63 Casualty Clearing Station, July 1918.

The main dressing station of the 34th Division was at Largny, twenty-three miles from Senlis, with an advanced dressing station at Montremboeuf Farm, near Villers Helon. When the division moved to Oulchy-la-Ville area, the main dressing station was established at Chouy with an advanced dressing

station at Billy-sur-Ourcq, and afterwards at Oulchy-la-Ville. The Largny main dressing station was thirteen miles from the front line, and the Chouy main dressing station five and a half miles.

The 15th Division had its first main dressing station at Coeuvres-et-Valsury, but did not then form an advanced dressing station, the wounded being evacuated to the main dressing station direct through loading posts in the Chazelle-Chaudun Valley and at Chaudun. When the division moved to Villemontoire area an advanced dressing station was formed

SKETCH MAP SHOWING POSITIONS OF MEDICAL POSTS OF THE 15TH & 34TH BRITISH DIVISIONS WITH THE FRENCH GROUPE D'ARMEES DE RESERVE ON THE WESTERN FLANK OF THE MARNE SALIENT DURING OPERATIONS OF JULY 1918.



at Lechelle. The distance of the main dressing station of the 15th Division from the casualty clearing station was thirty-one miles and from the front line about seven miles.

The position of No. 63 C.C.S. at Senlis was undoubtedly much too far back, but as the building was ready and the casualty clearing station was required to take in wounded within six hours of its arrival, no alternative site was feasible at the time.

Permission was obtained from the French authorities to pitch tents and bring up ambulance trains to Villers Cotterets, and an application was made by wire on 29th July for a second casualty clearing station to be pitched under canvas at Halte St. Remy on the site of the existing walking wounded post.

Sick and Wounded admitted to C.C.S., Evacuated to Base, or Died during the Operations of the 15*th and* 34*th Divisions on the Marne, from* 6 *a.m.* 23*rd July to* 6 *a.m.* 5*th August* 1918.

For twenty-four hours ending 6 a.m.	Admitted.				Evacuated.				Died of Wounds.	
	Sick.		Wounded.		Sick.		Wounded.			
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.
July 24th	1	76	34	573	—	—	—	—		
,, 25th.. ..	3	34	11	650	3	39	42	855		
,, 26th.. ..	—	—	6	213	1	68	4	333		
,, 27th.. ..	3	21	16	427	2	22	19	467		
,, 28th.. ..	2	94	10	176	—	—	—	—		
,, 29th.. ..	—	21	14	282	2	104	13	309		
,, 30th.. ..	1	61	25	624	2	72	22	749		
,, 31st	1	110	24	1,017	—	99	25	853		
Aug. 1st	3	49	6	220	1	24	6	350		
,, 2nd	—	41	31	405	2	61	13	317		
,, 3rd	1	24	10	778	1	40	28	852		
,, 4th	1	59	13	208	—	—	—	—		
,, 5th	—	9	2	12	2	43	15	331		
Totals	16	599	202	5,585	16	572	187	5,416	10	94
Total, 15th Div. ..	8	316	115	2,457	8	298	103	2,364	6	50
Total, 34th Div. ..	8	283	81	3,061	8	274	78	2,985	4	44
Americans ..	—	—	6	18	—	—	6	18	—	—
Germans	—	—	—	49	—	—	—	49	—	—

Number and Disposal of British Sick and Wounded of 15*th and* 34*th Divisions admitted to Allied Medical Units.*

Units.	Total Number.	To C.C S.	To Interior.	Returned to Duty.	Died.	Remaining in Army Area unfit for Evacuation.
American ..	133	125	—	—	8	—
French ..	170	93	47	7	16	7
Totals ..	303	218	47	7	24	7

In view, however, of the early withdrawal of the British divisions this casualty clearing station was withheld. The alternative of sending part of No. 63 C.C.S. to Halte St. Remy as an advanced operating centre was considered, but it was not thought practical owing to the high pressure at which it was working. Several cases of severely wounded men were taken instead to the French operating centre near Villers Cotterets.

The relief of congestion at the casualty clearing station and at the main dressing stations was the main consideration. Consequently on three occasions, namely, July 29th, 30th and August 2nd, when large numbers had to be dealt with, the lightly wounded were sent down by ambulance train from the walking wounded post at Halte St. Remy. The trains halted at Senlis, and any patients who required immediate operation were removed to the casualty clearing station and the train loads adjusted. In this way 1,443 wounded were sent down from Halte St. Remy by ambulance train, and 1,240 of them went on to the base, without entering the casualty clearing station. Owing to this expedient there was never at any time congestion at the main dressing stations or at the casualty clearing station.

The numbers of sick and wounded admitted and transferred to the base during the period are shown in the table on the preceding page. Most of those admitted to French or American medical units were transferred to No. 63 C.C.S.

With the close of these operations the medical units were distributed to the armies on the British front. G.H.Q. (South) was closed on the 19th August, the last of the medical units, No. 63 C C.S., having left on the 14th of the month.

CHAPTER XVII.

THE MEDICAL SERVICES DURING THE ADVANCE TO VICTORY.

THE period of offensive action by the British Armies, which led to final victory and the Armistice on the 11th November 1918, has been divided into two phases ; the first a phase of fighting in entrenched positions, and the second a phase of fighting in open country.* The first phase was one in which the enemy was driven out of one position after another to the Hindenburg line between St. Quentin and the Scarpe, and culminated in the British forces breaking through the Hindenburg line at the end of September and beginning of October 1918. Consequently the operations of this phase took place in the devastated area over which the Battles of the Somme in 1916, of Arras in 1917 and of the German offensive in 1918 had been fought. During the second phase the enemy was driven back fighting rearguard actions over open country until the British entered Maubeuge on the 9th and Mons on the 11th November, when hostilities ceased.

Outline of the Operations.

The British offensive was commenced by the Fourth Army in front of Amiens, in combination with the French First Army. The Canadian Corps was on the right, the Australian Corps between it and the Somme, and the IIIrd Corps on the left, north of the Somme, the Fourth Army front extending for some eleven miles from the Amiens–Roye road to Morlancourt. The French First Army was placed under Sir D. Haig's orders for the operations and was on the right of the Canadian Corps. The Cavalry Corps was behind the Fourth Army front east of Amiens. The attack, which was commenced on the 8th August with massed artillery fire, was completely successful, an advance of six or seven miles being made by nightfall. It was continued on the 9th August and following days, and was finally broken off on the 13th August after the front had been advanced to a line from Dernancourt through Bray and Proyart to the west of Chaulnes and Roye. The three cavalry divisions, fourteen infantry divisions, including the 33rd American Division, and 400 tanks took part in these operations.

* Sir Douglas Haig's despatches, p. 257.

This opening battle was followed by minor operations in Flanders, including the capture of Oultersteene by the 31st, 29th and 9th Divisions of the Second Army on the 18th and 19th August.

The next great attack was opened by the IVth and VIth Corps of the Third Army on the 21st August. They attacked on a nine-mile front north of the Ancre from Hamel to Moyenneville, and advanced to the Albert–Arras railway before night. The following day the IIIrd Corps attacked south of Albert and recaptured the town; and then on the 23rd August the main attack on the enemy's entrenched positions was launched along the whole front of some thirty-three miles from the junction of the British with the French at Lihons, north-west of Chaulnes, to Mercatel, south of Arras. The Australian and IIIrd Corps of the Fourth Army south and north of the Somme, and the IVth, Vth and VIth Corps of the Third Army were engaged. The fighting was continued until the 1st September over the old battle ground of the Somme in 1916. The British line at the close of the operations had then been advanced to the Somme, south of Peronne, and northwards through Peronne and Bapaume to the Scarpe, east of Roeux. Twenty-three divisions had taken part in the battle and had captured over 34,000 prisoners and 270 guns. The enemy as a result of these operations had commenced to shorten his line on the Lys salient, with the result that by the 2nd September the British front was advanced from Festubert to Estaires and northward to Steenwerck and Kemmel; Merville and Bailleul were thus reoccupied although now reduced to ruins.

In the meantime the Canadian Corps, which had handed over its area on the right of the Fourth Army to French troops and had moved up to the right of the First Army, attacked the German positions astride the Scarpe east of Arras on the 26th August on a front of five and a half miles and captured Monchy-le-Preux. The First Army then continued to carry the German positions and by the end of the month had come within assaulting distance of the Hindenburg line from Quéant to Drocourt south-west of Lens. On the 2nd September this line was attacked and broken by the XVIIth Corps of the Third Army and the Canadian Corps of the First Army, 8,000 prisoners being taken. In all 16,000 prisoners had been captured during the battle of the Scarpe. Ten divisions were engaged in the battle.

The next stage in the advance consisted of operations against Havrincourt and Epehy between the 12th and 18th

September by corps of the Fourth and Third Armies. Both these positions, it will be remembered, were positions around which battles were fought in November and December 1917 by the Third Army. The vicinity of these villages was held in strength covering the Hindenburg line. The Canal du Nord, north of Havrincourt, was also strongly held by the enemy. The positions in the Havrincourt sector were attacked on a front of about five miles by the IVth and VIth Corps of the Third Army on the 12th September, and the villages of Trescault and Havrincourt occupied. Further south the IXth and Australian Corps pushed forward and captured Holnon village, at the junction of the British with the French line, by the 17th September. On the following day an attack was then made by the Fourth and Third Armies on a seventeen-mile front between Holnon and Gouzeaucourt, in co-operation with the French south of Holnon. The fighting was very severe and took place in heavy rain. All the enemy's positions and nearly 12,000 prisoners were captured by nightfall. Fifteen divisions took part in these operations.

The final and decisive operations against the German entrenched positions commenced on the 27th September and ended on the 5th October. On the first day the IVth and VIth Corps of the Third Army and the XVIIth and Canadian Corps of the First Army attacked on a front of some thirteen miles from Gouzeaucourt along the Canal du Nord to opposite Sauchy-Lestrée. The main feature of the operation was the crossing of the canal in the neighbourhood of Moeuvres in the centre of the attack, when the troops debouched fan-wise north-west towards the Sensée Canal and southwards towards the St. Quentin Canal at Marcoing, while the centre pushed forward through Bourlon Wood in the direction of Cambrai. Fourteen divisions took part. The operations were completely successful, 10,000 prisoners were captured, and a line secured from Beaucamp, north of Gouzeaucourt, through Ribecourt, Fontaine-Notre-Dame to Epinoy and Oisy le Verger, south of the Sensée Canal, the depth of the advance at its centre being about four miles.

This attack was followed on the 29th September by an attack delivered by the Fourth Army with the IXth, IInd American Corps, and IIIrd Corps; by the French First Army on its right, and by the Vth and IVth Corps of the Third Army between Vendhuille and Marcoing on its left. The attack was against the Hindenburg line and strongly defended positions east and west of the Scheldt Canal, between Holnon

and Vendhuille. In one section, between Bellicourt and Vendhuille, the canal ran through a tunnel for some 6,000 yards. The fighting was general all along the line and in places against determined resistance; but the Hindenburg line was broken through in several places and the enemy's rear defences taken, an advance being made to a depth of some three miles to beyond Magny-la-Fosse in the centre of the attack by the 46th Division, the troops of which had swum or waded across the canal north of Bellenglise. The two American divisions, the 30th and 27th, were heavily engaged between Bellicourt and Bony near the canal tunnel, with the 5th and 3rd Australian Divisions in support.

The Third Army had in the meantime crossed the Scheldt Canal between Masnières and the outskirts of Cambrai, and the line had been advanced still further by the Canadian Corps to the north-west of Cambrai. The fighting continued during the following days until the whole of the Hindenburg line of defences had been broken through. St. Quentin was occupied by the French on the 1st October, and by the evening of the 7th October the British line ran due north from St. Quentin to Cambrai and thence westwards along the Sensée Canal to the old line north of Sauchy-Lestrée. The thirty British and two American divisions engaged in these operations captured 36,000 prisoners and 360 guns

While these battles were being fought in the south of the British front, a great advance was made in Flanders on the Ypres front by the Belgian Army, some French divisions, and the XIXth and IInd Corps of the Second Army, which had been placed under the command of the King of the Belgians for the operations. The XIXth and IInd Corps attacked on the 28th September on a four and a half mile front south of the Ypres–Zonnebeke road, the Belgians on their left carrying on the front as far as Dixmude. The enemy's resistance was slight, and the line by the evening of the 1st October had reached the Lys from Armentières to Comines, and north of that town to a position west of Menin and east of Moorslede; a depth of some eight or nine miles from the original position in front of Ypres.

The British front from Lens to Armentières was also advanced during this period to beyond Lens, La Bassée and Armentières by the withdrawal of the enemy from his positions astride the La Bassée Canal. This front had been taken over by the reconstructed Fifth Army under General Sir W. Birdwood, the depth of the advance from the line held west

of Merville on 8th August being some twelve or thirteen miles to Erquinghem within five miles of Lille.

The second phase of the advance to victory commenced on the 8th October with an advance in open country to Maubeuge and Mons by the Fourth and Third Armies and the right of the First Army.

The first stage of this advance was against Le Cateau. The operations were opened on the morning of the 8th October by the Fourth and Third Armies on a front of over seventeen miles from Sequehart, at the junction of the British right with the French First Army, to south of Cambrai. On the first day the line was advanced to near Cambrai. On the following night Cambrai was entered and by the night of the 9th October the advance had reached to within two miles of Le Cateau, where it was held up on the 10th October along the west bank of the river Selle. Twenty British divisions, two British cavalry divisions and one American division took part in this advance, capturing 12,000 prisoners. The depth of the advance was some thirteen miles. While these operations were going on, the enemy, fighting rearguard actions, withdrew from the area between the Scarpe, Douai and Lens, and the 8th Division reached the outskirts of Douai on the 13th October. A similar retreat was effected in front of the French, who occupied Laon on the 13th October.

On the north the force under the King of the Belgians attacked along the whole front from the Lys at Comines to Dixmude. The British sector of the force extended from Comines to St. Pieter, half way between Menin and Roulers. The Xth, XIXth and IInd Corps were engaged, with the 30th and 34th, 41st and 35th, and the 36th, 29th and 9th Divisions respectively. There was considerable opposition, but by the 16th October the British line was advanced to beyond Menin as far as Courtrai, while the French and Belgian troops further north had occupied Roulers and Thourout. "Ostend fell on the 17th October and three days later the northern flank of the Allied line rested on the Dutch frontier."* Further south a movement towards Lille was commenced by the VIIIth Corps of the First Army, the XIth Corps of the Fifth Army, and XVth Corps of the Second Army. By the evening of the 17th October Lille was entered, and the advance was carried steadily eastwards until, on the evening of the 22nd October, the general line of the Scheldt was reached from the

* Sir Douglas Haig's despatches, p. 290.

western outskirts of Valenciennes and Tournai to some seven miles east of Courtrai. This advance was a specially rapid one extending as it did to a depth of some twenty miles between the 17th and 22nd October.

While this advance was being made on the north, much severe fighting was taking place on the Fourth Army front for about ten miles from Le Cateau southwards. The IXth, IInd American and XIIIth Corps attacked the enemy in that sector on the 17th October in conjunction with the French First Army west of the Sambre and Oise Canal opposite Guise. The enemy offered a strong resistance, but by the 19th October he was driven across the Sambre and Oise Canal. This was followed by an attack on the line of the Selle, north of Le Cateau, on the 20th October by seven divisions of the Third Army and one of the First Army. Again there was determined resistance with frequent counter-attacks. On the 23rd October a fresh attack was made, at first by the IXth and XIIIth Corps of the Fourth Army, followed by the Vth, IVth, VIth and XVIIth Corps of the Third Army along a fifteen-mile front from the junction with the French, facing the Sambre, to the north-east of Haussy. The next day the attack was extended five miles northwards by the left of the XVIIth Corps and XXIInd Corps of the First Army to the Scheldt, south-west of Valenciennes. In spite of unfavourable weather, difficult country and determined opposition, the British line was advanced to a depth of six miles and ran along the Sambre and the western outskirts of the Forest of Mormal to the vicinity of Le Quesnoy. Twenty-four British and two American divisions took part in this battle and captured 20,000 prisoners and 475 guns.

The final battle of the war on the Western Front was now opened with the capture of Valenciennes after two days' fighting on the 1st and 2nd November by the XVIIth Corps of the Third Army and the XXIInd and Canadian Corps of the First Army on a front of some six miles south of the town. Following on this the main and decisive attack was made on the 4th November by the Fourth, Third and First Armies on a front of some thirty miles from the Sambre, north of Oisy to Valenciennes. The attack was carried forward across the river and through the Mormal Forest by twenty-six divisions of the IXth, XIIIth, Vth, IVth, VIth, XVIIth, XXIInd, and the Canadian Corps. 19,000 prisoners were captured. On the night of the 4th/5th November the enemy began to fall back on his whole front. After that time the resistance was weak.

SKETCH MAP SHOWING THE MOVEMENTS OF CASUALTY CLEARING STATIONS DURING THE ADVANCE TO VICTORY.

Franco-Belgian Army

Second Army.

Fifth Army.

First Army.

Third Army.

Fourth Army.

French Army

Reference.

- Position of C.C.S's on August 8th 1918.
- Intermediate C.C.S. Positions during the Advance, the date indicating when move from that position took place and the arrow the direction of new position.
- C.C.S. Positions on November 11th 1918.
- C.C.S's. brought up from L. of C.
- Stationary Hospitals at commencement of attack.
- Finel position of Stationery Hospitals which moved prior to November 11th 1918.
- British Front Line at the beginning of the Advance.
- ...Do. ...Do. ...Do. at the time of the Armistice.
- Intermediate positions of the British Line during the Advance.

10 5 0 10 20 Miles.

1218. 2 484 & 5060 101. 1500. 6. 23

Malby & Sons, Lith.

The advance was then rapid. Maubeuge was entered on the 9th November by the Guards and the 62nd Division, and Mons on the 11th November by the 3rd Canadian Division after considerable opposition.

At 11 a.m. on that day hostilities ceased.

The Medical Services with the Fourth Army.

The Battle of Amiens.—The preparations for the opening battle on the 8th August by the Fourth Army were kept very secret. In order to divert attention from the direction of the attack some Canadian units and No. 1 and No. 4 Canadian C.C.Ss. were transferred to Arneke in the Second Army area from Pernes during the previous week, and no medical units were permitted to be moved into the Fourth Army area before the commencement of the attack. The Canadian Corps was then being transferred to the Fourth Army from the First Army. The D.M.S. of the Fourth Army, Maj.-General M. O'Keeffe, was informed of the impending operations on the 6th August, and at once applied to the D.G.M.S. for two more casualty clearing stations, three motor ambulance convoys, fourteen surgical teams and forty-eight extra nursing sisters. He cleared all sick from casualty clearing stations to the base on the 7th August, and ordered Nos. 53, 55 and 49 C.C.Ss. to close down and be ready to move suddenly with twelve lorry loads of stores each. Over 4,000 sick were thus unloaded on to base hospitals on the 6th and 7th August, a proceeding which in itself was apt to indicate where the attack was likely to take place, but too late for the enemy to take advantage of any information so obtained, The Asylum just south of Amiens on the Amiens–Dury road was marked down as a suitable position to which the casualty clearing stations could be brought forward. No. 48 C.C.S. was then on its way from the French zone and was diverted to that locality.

The Fourth Army had twelve casualty clearing stations on the 6th August placed as follows :—

Crouy..	..	Nos. 5 and 47.
Longpré	..	Nos. 12, 53 and 55.
Pernois	..	Nos. 4 and 41.
St. Riquier	..	No. 49 and Lucknow.
Vignacourt	..	Nos. 20, 61 and 37.

No. 41 Stationary Hospital was at Pont Remy.

The sketch map shows these positions. They were all further back than had been usual in consequence of the experiences during the German offensive earlier in the year.

Consequently, only those at Pernois, Vignacourt and Crouy were allotted for receiving wounded from the front line, those at Pernois for the IInd Corps, those at Vignacourt for the Australian Corps, and those at Crouy for the Canadian and Cavalry Corps. The others were for the sick of back areas and special cases.

Advanced depôts of medical stores were at Vignacourt (No. 13), Crouy (No. 14) and Longpré (No. 18). The motor ambulance convoys with the Army were Nos. 3 and 11 allotted to the Australian Corps, No. 10 to the IIIrd Corps, Nos. 37 and 44 to the Canadian Corps, Nos. 24 and 42 as Army Reserve. Some of the cars, however, of convoys No. 37 and No. 44, which had arrived just before the battle commenced, had difficulty in getting up to the Canadian Corps to which they were allotted owing to congestion of traffic on the roads.

No. 48 C.C.S. on its way from the French zone arrived at the asylum during the afternoon of the 8th August. The asylum was the main dressing station of the Canadian Corps at the time, and when the main dressing station was moved forward, the wounded, some 500, left there were taken over by No. 48 C.C.S.

There was some difficulty with regard to the supply of surgical material to units of the Canadian Corps. They had arrived without any surgical dressings and had to be hurriedly supplied from the advanced depôts. Lorries were sent to Abbeville to replenish the depleted advanced depôts, as stores already requisitioned were being held up by congestion of traffic on the railway.

Most of the surgical work during the 8th August fell on the casualty clearing stations at Crouy, but at dawn next day Nos. 55 and 53 were sent forward to Vecquemont and No. 49 to Boves, both positions being in advance of Amiens and north and south respectively of the Somme. On the 10th August No. 47 C.C.S. was closed and moved to the asylum, and on the following day No. 61 C.C.S. was sent to Vecquemont. No. 1 and No. 4 Canadian C.C.Ss. were now coming down from the Second Army and were being placed at Boves. On the 13th August No. 37 C.C.S., which had been refitted on a mobilization scale after capture on the Aisne, was sent up to the Fourth Army and detrained at Vecquemont. On the 14th August No. 5 was closed at Crouy preparatory to going to Vecquemont on the 21st August, and on the 17th August No. 41 was also closed and sent to Vecquemont.

Between 6 a.m. on the 8th August and 6 a.m. on the 11th August, the number of wounded received into the casualty clearing stations of the Fourth Army was as follows :—

—	Offs.	O.R.	Germans.	
			Offs.	O.R.
8th–9th August 1918.. ..	353	6,597	17	676
9th–10th ,, ...	245	3,974	43	814
10th–11th ,, ...	183	4,236	22	342
Totals	781	14,807	82	1,832

The numbers consequently were considerably less than in the first days of the great battles of 1915, 1916 and 1917, but the difficulty of handling them was probably greater, as the advance into the enemy's lines was to a depth of some nine or ten miles and casualty clearing stations had not yet been fully opened in the more forward areas. The situation was met by the number of convoys in the Fourth Army having been increased to admit of two being held in Army reserve, and of two being allotted to the Canadian and Australian Corps in place of the usual one.

The casualties amongst medical personnel during these three days were four R.A.M.C., two C.A.M.C., one A.A.M.C. and four U.S.A. medical officers killed and six wounded, seventeen other ranks killed and sixty wounded.

As many as forty-eight surgical teams from the lines of communication and other armies and sixty-four additional nursing sisters were sent to the casualty clearing stations of the Fourth Army between the 7th and 10th August. Until the casualty clearing stations that were being moved forward to the asylum, Boves and Vecquemont were ready, the six casualty clearing stations at Pernois, Crouy and Vignacourt had most of the work thrown on them.

As this was the first experience during the war of an advance to a great depth necessitating a corresponding advance of the unwieldy casualty clearing stations, the following note of the 20th August by the D.M.S. of the Army is of importance :

"Most of the casualty clearing stations which have moved up to date have moved rapidly and at short notice. At first an attempt was made to move casualty clearing stations with twelve lorry loads. The amount of materials, etc., which they could carry on these loads was very limited and quite insufficient to deal with casualties coming in from a big battle. This was stopped and forty lorry loads were allowed. Frequently twenty lorries

only were available, and they had to make two journeys in one day ; this is quite satisfactory provided the distance moved forward is not too great . . . . . It is possible for a casualty clearing station with forty lorry loads to close, pack, re-pitch and open in a new place in thirty-six to forty-eight hours, which means that they carry as essentials all their canvas, Soyer's stoves for cooking, stretchers, blankets, and fifty beds and mattresses, and whatever else the O.C. likes to take to bring the total up to forty loads."

This then was in marked contrast to the 100 to 200 lorry loads, which had been moving casualty clearing stations in 1916 and 1917, and forms an important basis for estimating the requirements of moving casualty clearing stations by road.

It will be observed that at the end of the first stage of the great advance, the Fourth Army situation as regards the position of its casualty clearing stations had materially altered. Vecquemont had become the chief centre, for six casualty clearing stations had been concentrated there ; not, however, on the old sites of the Somme battles but on high ground to the west of the town, about half a mile from the railway station.

Difficulty had been experienced in getting ambulance trains up to the new railheads during the operations, as directly a railhead was opened ammunition and supply trains came up in a constant stream. It was on account of this difficulty that so many casualty clearing stations were opened at Vecquemont, as it was possible there to load two ambulance trains at one time, and the pressure of ammunition and supply trains was over by the time the casualty clearing stations had opened.

No. 18 Advanced Depôt of Medical Stores had moved to the asylum, south of Amiens, but otherwise there was no change in the position of advanced depôts or of motor ambulance convoys during the advance.

The divisions engaged during this first battle were the 3rd, 1st and 2nd Canadian Divisions, between the Amiens–Roye and Amiens–Peronne road, with the 4th Canadian Division and the 3rd, 2nd and 1st Cavalry Divisions passing through ; the 2nd and 3rd Australian Divisions, between the Amiens–Peronne road and the Somme, with the 4th and 5th Australian Divisions passing through ; and the 50th, 18th and 12th Divisions of the IIIrd Corps, between the Somme and the Ancre. The 32nd Division joined the Canadian Corps on the 10th August and went into the line.

The *Canadian Corps* divisions formed collecting posts, marked by a stick and white bandage, instead of regimental aid posts ; the bearers or horsed ambulance wagons brought the wounded who were collected by the regiments from these posts to the advanced dressing stations. The main dressing

stations, as the advance progressed, moved to the advanced dressing station positions. No attempt was made to pitch tents or occupy buildings. The weather was fine and the work of the main dressing station, except on the first day, could then be carried out in open fields.

The *Australian Corps* had much fewer casualties than was anticipated. The D.D.M.S., Colonel Barber, in anticipation of much larger numbers of wounded, had organized a system of reserve dressing stations which were to open at specified points only when ordered to do so by him. His general arrangements after the advance in the afternoon of 10th August were to have two main dressing stations, one for the right and one for the left sector, each receiving casualties from an advanced dressing station and a divisional collecting post. A reserve dressing station was ready to open in each sector as required. There was a light railway between Vecquemont and Vignacourt and arrangements were made to run trains of ten trucks, each truck carrying fifteen to twenty lightly wounded, to the casualty clearing stations at Vignacourt.

A feature in the work of the Australian Corps was the organization of blood transfusion and resuscitation teams for work with the field ambulances at the advanced dressing stations or main dressing station of each division. Until these were ready, a corps resuscitation team carried on the work of blood transfusion in suitable cases. Each team consisted of two officers and four orderlies, specially trained in the operation.

The divisions of the *IIIrd Corps*, which included the 33rd American Division, had main dressing stations at Querrieu, Montigny and Vadencourt, with a corps walking wounded collecting station at Montigny, for the operations on the 8th August. They were cleared to the casualty clearing stations at Pernois. Twenty-eight lorries were placed at the disposal of the D.D.M.S., Colonel Profeit, for sitting cases. Four divisions were in the line when the attack was made, the medical situation being as follows :—

Right division	(58th)	A.D.S.—Smith's Farm, near Querrieu. W.W.C. Post—Corbie–Mericourt Road, on the site of the Heilly C.C.Ss. during the Somme battles of 1916. M.D.S.—Querrieu. C.W.W. Station—Montigny Farm.
Right centre division.	(18th)	A.D.S.—Bray–Corbie Road, about 1½ miles from Corbie. W.W.C. Post—As for right division. M.D.S. ,, ,, C.W.W. Station ,, ,,

Left centre division.	(12th)	A.D.S.—Buire. W.W.C. Post—Sugar Factory, Ribemont. M.D.S.—Red Château, Montigny. C.W.W. Station—As for right division.
Left division.	(47th)	A.D.S.—Henencourt Château. W.W.C. Post—Warloy. M.D.S.—Vadencourt Château. C.W.W. Station—As for right division.

The 66th American Brigade was with the 12th Division, but had its main dressing station with the 47th Division, and an independent advanced dressing station and walking wounded collecting post on the Querrieu–Albert road, the former just south-east of and the latter south-west of Bresle. The 63rd and 17th Divisions joined the corps during the operations.*

The wounded in the IIIrd Corps from 6 a.m. 8th to 6 a.m. 12th August were 190 officers and 3,927 other ranks, of whom 35 per cent. were lying cases, 20 per cent. sitting and 45 per cent. walking cases. The average time for the return journey of cars from the main dressing stations to casualty clearing stations was three hours, and for lorries from the corps walking wounded stations to casualty clearing stations six hours.

The Battles of the Somme.—The operations of 21st August to 3rd September 1918, over the old battle ground of the Somme and Arras, had no specially new features so far as the medical situation was concerned, except in their effect on the strategical positions of the casualty clearing stations. As in the Somme battles of 1916, corps were constantly changing from one sector of the front to another and divisions from one corps to another. Their medical units were consequently subjected to the same frequent changes, and were employed in accordance with the general principle of main dressing stations following up the advance to advanced dressing station positions and the latter to regimental aid post positions.

The *IIIrd Corps* of the Fourth Army received into its medical units during this period 325 officers and 7,569 other ranks, of whom 60 per cent. were walking wounded, 30 per cent. lying down cases and 10 per cent. sitting cases. During the first twenty-four hours, the average number of casualties in each division engaged was 800, the proportion of walking cases being higher, 69 per cent., than during the whole period. Colonel Profeit, the Corps D.D.M.S., records some interesting

* His Majesty the King, on the 12th August, visited the dressing stations at Montigny and Querrieu.

and valuable details regarding the clearing of wounded back, during this period of mobile warfare :—

"Except during an exceptional rush of casualties one car of the motor ambulance convoy every ten minutes at each divisional main dressing station and one lorry every twenty minutes at each divisional walking wounded collecting post were sufficient to keep clear. The speed of the lorries was about six miles per hour and of the cars seven miles per hour. . . . ."

The estimate of the number of motor ambulance cars and lorries required was based on these factors and on the distances between respective medical posts.

The Fourth Army casualty clearing stations receiving the wounded were the six at Vecquemont No. 47 and No. 48 at the asylum, Amiens, and No. 49 and Nos. 1 (Canadian) and 4 (Canadian) at Boves were not specially involved, as the operations were chiefly north of the Somme, but they received a number of the walking wounded. There was some anxiety regarding evacuation from Vecquemont on account of delays in getting ambulance trains up, but in consequence of the large number of casualty clearing stations there, there was no great congestion.

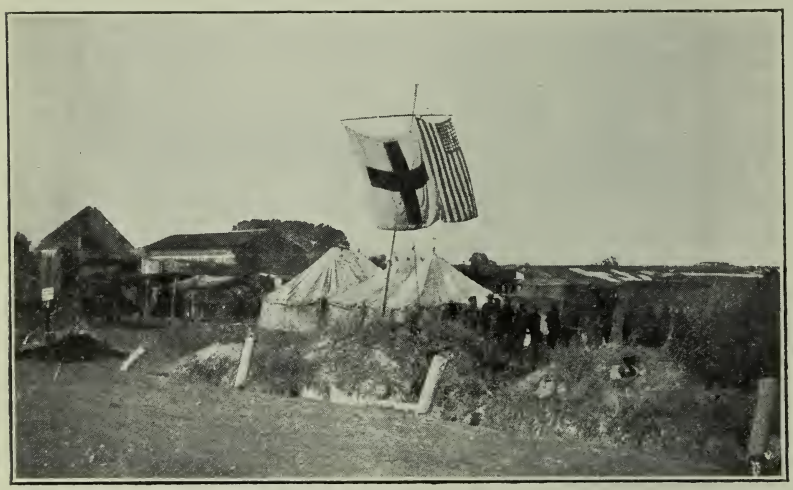
By the end of August further movements of the Fourth Army casualty clearing stations became possible, but owing to the Third and First Armies being engaged during this period as well as the Fourth, and to the area previously occupied by the Canadian Corps having been taken over by the French, the three casualty clearing stations at Boves were transferred, No. 49 to the Third Army to Colincamps, and the two Canadian casualty clearing stations to Pernes in the First Army. No. 4 C.C.S., at Pernois, was also transferred to Colincamps. The Fourth Army casualty clearing stations were then distributed as follows by the end of the month. Their new positions indicate the substantial advance made during the battle :—

Edgehill ..	Nos. 47 and 48 from the asylum and No. 55 from Vecquemont.
Heilly ..	No. 20 from Vignacourt.
Proyart ..	Nos. 5 and 41 from Vecquemont.
Vecquemont ..	Nos. 53, 37 and 61.
Longpré ..	No. 12.

No. 41 Stationary Hospital was moved then into the asylum, at Amiens, from Pont Remy.

Between the 2nd and 18th September the Fourth Army was not heavily engaged, but during that period a steady advance was made over ground from which the enemy had withdrawn,

and the casualty clearing stations were moved to positions still further forward. Vecquemont was closed as a casualty clearing station centre by the 9th September. No. 53 moved to Peronne la Chapellette, where it was joined by No. 12, from Longpré, on the 9th September; No. 37 and No. 61 went to Maricourt Plateau. Edgehill was also closed; No. 48 C.C.S. moving on the 12th, and No. 47 on the 16th September to Brie, south of Peronne and on the east bank of the canal, and No. 55 on the latter date to Doingt, where No. 20, from Heilly, had already arrived; so that before the operations,



No. 118 U.S.A. Field Ambulance at Tincourt during the Advance to Victory, 1918.

which commenced on the 18th September, the Fourth Army casualty clearing stations were all at Proyart, Peronne la Chapellette, Doingt, Brie or Maricourt Plateau.

The Battle of Epehy.—On the 18th September the Fourth Army again attacked with the IIIrd and IXth Corps, and a further advance was made; the wounded admitted to the casualty clearing stations of the army between the 18th and 21st September being 345 officers, 8,359 other ranks, 24 German officers and 757 German other ranks. The wounded during this attack were received into the casualty clearing stations at Brie, Peronne la Chapellette and Doingt. After the fighting had ceased Proyart was closed as a casualty clearing station centre, No. 41 C.C.S. moved to Doingt and No. 5 to Brie.

The casualty clearing stations, Nos. 12 and 53, at Peronne la Chapellette, on the west of the canal, were also moved forward to Tincourt, to the old casualty clearing station site there. Tincourt was also reinforced by two other casualty clearing stations, Nos. 50 and 58, the former from the L. of C. and the latter from the Second Army ; so that when the Fourth Army made its assault on the Hindenburg line on the 29th September, there were four casualty clearing stations at Tincourt, three at Brie, three at Doingt, and two on the Maricourt Plateau.

The Battle of St. Quentin Canal.—The attack on the 29th September by the Fourth Army was made by the IIIrd (12th and 18th Divisions), IInd American (37th and 30th Divisions), Australian (1st, 2nd, 3rd, 4th and 5th Australian Divisions) and IXth Corps (1st, 6th, 32nd and 46th Divisions), with the XIIIth Corps and Cavalry Corps in support. The distance of the casualty clearing stations from the front line of attack was from ten to fourteen miles, Tincourt being the nearest centre. During the interval between the 21st and 29th September there had been no operations on a large scale, although fierce fighting took place at many points of the line occupied by the Fourth and Third Armies between St. Quentin and Cambrai. The general assault on the Hindenburg line in the Fourth Army sector led to stubborn fighting north of St. Quentin, which continued for several days. The number of wounded who were admitted to its medical units between the 29th September and 5th October amounted to 743 officers, 16,863 other ranks, and 50 German officers and 1,262 German other ranks.

The Battle of Cambrai.—A further advance of casualty clearing stations of the Fourth Army was now made previous to a renewal of the attack on the 8th October. Sites for them had been selected at Bihecourt, on the St. Quentin–Roisel line of railway, about one mile north of Vermand, and at Roisel, about three miles east of Tincourt. Nos. 41, 48 and 53 C.C.Ss. were moved to Roisel, and Nos. 5, 47 and 61 to Bihecourt by the 7th October. These formed then the forward casualty clearing stations with three still at Tincourt, two at Doingt and one at Maricourt Plateau. Brie ceased to be a casualty clearing station centre. The railway sidings, however, at Roisel and Bihecourt were not ready on the day of the renewed attack, and the casualty clearing stations there were not opened for wounded on the 8th October. Trains came up to these places for the first time on the 10th October.

Between the 6th and 12th October the wounded in the Fourth Army numbered 304 officers, 7,275 other ranks, 22 German officers and 782 German other ranks.

Battles of the Selle and Sambre.—The next general attack, in which the Fourth Army was engaged, took place on the 17th October by divisions of the XIIIth, IInd American and IXth Corps. The most forward railheads for ambulance trains at the time were Bihecourt and Roisel. The fighting in open country had now commenced and although the number of wounded in the Fourth Army then became less as compared with the previous fighting—numbering some 3,000 to 4,000 weekly until the Armistice—the difficulties of transport were greater, owing to the rapid advance, the broken nature of railways and roads in the devastated areas, and the damage done to them by the retreating enemy.

Between the 17th October and the date of the Armistice only two more advanced casualty clearing station positions were opened by the Fourth Army, namely, at Bohain and Busigny. Nos. 55, 20, 50 and 61 C.C.Ss. went to the former place between the 19th and 22nd October ; and Nos. 12 and 48 to the latter on the 22nd and 23rd October. Doingt thus ceased to be a casualty clearing station centre during the last week of October, and Tincourt was reduced to one casualty clearing station only, No. 58. Maricourt was vacated on the 2nd November by No. 37 C.C.S. being moved up to Busigny.

The situation, therefore, of the casualty clearing stations in the Fourth Army at the time of the Armistice was as follows :—

At Bohain ..	Nos. 20, 50, 55 and 61.
,, Busigny ..	Nos. 12, 48 and 37.
,, Bihecourt	Nos. 5 and 47.
,, Roisel ..	Nos. 41 and 53.
,, Tincourt ..	No. 58.

No. 41 Stationary Hospital remained at the asylum, Amiens, throughout the advance.

Medical Services with the Third Army.

The Third Army became engaged in the active operations of the advance on the 21st August, after the Fourth Army had advanced the front to a line from Lihons to Albert. The

casualty clearing stations of the Third Army were then situated in the following localities :—

Fienvillers	Nos. 34 and 38.
Gézaincourt	Nos. 3, 29 and 56.
Frévent	Nos. 19 and 43.
Wavans ..	No. 21.
Ligny-sur-Canche ..	No. 3 Canadian.
Fillièvres	No. 46.
Hesdin	No. 59.
Auchy-les-Hesdin ..	No. 45.

The two stationary hospitals, No. 6 at Frévent and No. 3 (Canadian) at Doullens Citadel, had been moved before the attack. The former was at Fillièvres, where it was ready to receive patients on the 18th August. The latter had been closed on the 11th August and was at Rouen.

The Battles of Albert and Bapaume.—In the fighting which took place on the Third Army front from Hamel, on the Ancre, to Moyenneville, between the 21st and 24th August, 529 officers and 12,746 other ranks, and 38 German officers and 980 German other ranks were admitted to the Third Army casualty clearing stations, chiefly to those at Gézaincourt and Frévent. An advanced operating centre was formed at the main dressing station of the VIth Corps at Bac-du-Sud with a surgical team from No. 46 C.C.S. In the subsequent fighting 603 officers and 15,563 other ranks and 45 German officers and 923 German other ranks were admitted to the Third Army C.C.Ss. between the 25th and 31st August.

The line had then advanced to beyond Bapaume, and casualty clearing stations began to move forward. Nos. 45 and 46 were brought up on the 26th August to Bac-du-Sud (Bailleulval) ; Nos. 4 and 49 from the Fourth Army to Colincamps on the 28th and 29th August ; and No. 59 and No. 3 (Canadian) to Varennes at the same time.

The Battle of the Hindenburg Line.—During the fighting on the Third Army front in September and until the commencement of open fighting the wounded, during periods of attack, were as follows :—

	Offs.	O.R.	Germans.	
			Offs.	O.R.
Sept. 1st to 7th	390	8,538	22	907
Sept. 18th to 21st	214	5,130	6	223
Sept. 21st to 28th	355	9,155	31	840
Sept. 29th to Oct. 5th ..	306	7,289	17	389

The situation of the casualty clearing stations during these periods was :—

	Forward Area.	Middle Area.	Back Area.
For Sept. 1st to 7th	Bac-du-Sud (2) Varennes .. (2) Colincamps (2)	—	Fienvillers (2). Gézaincourt (2). Frévent .. (3). Wavans .. (1).
For Sept. 18th to 21st	Beaulencourt(2) Grevillers .. (2) Boisleux-au-Mont (2)	Varennes .. (2) Bac-du-Sud (2) Colincamps (2)	Gézaincourt (1). Wavans .. (1).
For Sept. 22nd to 30th.	Beaulencourt(3) Grevillers .. (3) Boisleux-au-Mont (2) Delsaux Farm(1)	Varennes .. (2) Bac-du-Sud (2)	Gézaincourt (1).

The Final Advance.—Before the Third Army was engaged on the 8th October and subsequent days in the fighting in open country, Ytres had been reoccupied as a casualty clearing station centre. No. 3 (Canadian) came there on the 1st October and No. 18 C C.S. three days later. A second casualty clearing station (No. 46) was also brought up on the 1st October to Delsaux Farm, south of Beugny, on the Cambrai road, about five miles east of Bapaume. Consequently, during the fighting between the 8th and 14th October, which advanced the Third Army front to Le Cateau over a depth of some twelve miles, the most forward of the casualty clearing stations were at Ytres and Delsaux Farm. Ytres was about twelve miles from the front line on October 7th and twenty-four miles on October 14th. The remaining casualty clearing stations at Beaulencourt, Grevillers, Boisleux-au-Mont, Varennes and Gézaincourt were ten to thirty miles still further back.

The Third Army was again engaged in severe fighting on the 20th, 23rd and 24th October, pushing its advance on to Le Quesnoy, some seven miles further. Just before this attack took place, No. 59 C.C.S. from Varennes and No. 45 from Bac-du-Sud were moved to a forward position at Awoingt, south of Cambrai. From Boisleux-au-Mont No. 38 C.C.S. was also moved to Awoingt on the 20th October, and on the 23rd October No. 19 C.C.S. was brought up to Caudry, where good buildings were available, half-way between Cambrai and Le Cateau.

Between the 24th October and the 4th November, when the operations commenced in the country between Valenciennes and the Sambre, the number of casualty clearing stations at Caudry was increased to four by the arrival of No 21 from Gézaincourt on the 26th October, No. 3 from Beaulencourt on the 31st October, and No. 49 from Grevillers on the 3rd November. Two casualty clearing stations, No. 4 from Beaulencourt and No. 34 from Grevillers, were opened at Solesmes in a much more advanced position during the first three days of November.

No. 3 New Zealand Field Ambulance at Solesmes, 1918.

The number of wounded received into the Third Army casualty clearing stations during the fighting between the 6th October and 2nd November was as follows :—

	Offs.	O.R.	Germans.	
			Offs.	O.R.
Oct. 6th to 12th	379	8,294	35	718
Oct. 13th to 19th	103	2,947	2	67
Oct. 20th to 26th	443	9,953	32	762
Oct. 27th to Nov. 2nd ..	98	2,247	9	97

No ambulance trains could come up to Cambrai for the casualty clearing stations at Awoingt. Consequently, on the 25th October wounded had to be carried from Awoingt by motor ambulance convoys to the casualty clearing stations at Ytres and Delsaux Farm, or to Beaulencourt and Grevillers, for evacuation by ambulance train. Evacuation in this way by road was particularly heavy, ten cars running hourly all day to Ytres and Delsaux Farm from Awoingt.

On the 3rd November, on the eve of the final operations, the railway bridge at Caudry was blown up by a delay-action mine, and no ambulance trains could be run to the casualty clearing station there. A large number of buses was obtained, and some twenty were kept for road evacuation from Caudry to Awoingt and, if necessary, to Delsaux Farm and Ytres. There was thus considerable trouble in evacuating the casualties during the fighting of the 4th and 5th November. Ambulance trains, moreover, were not running well and the number arriving to clear Awoingt was too few. The buses, owing to blocks on the road, took much longer on their journeys than had been usual. Evacuation had consequently to be carried on continuously by ambulance cars to Ytres and Delsaux Farm, and by the evening of the 5th November the drivers were much exhausted.

Owing to the rapidity of the advance between that date and the Armistice, the casualty clearing stations were left far behind, but the casualties, fortunately, were comparatively few. Third Army troops entered Maubeuge on the 9th November and then active operations ceased.

The wounded of the Third Army between the 3rd and 9th November were 355 officers and 7,562 other ranks, and 47 German officers and 958 German other ranks. The only change then made in the casualty clearing stations was to move No. 3 (Canadian) to Le Quesnoy on the 9th November. Consequently the situation of casualty clearing stations of the Third Army at the time of the Armistice was as follows :—

At Solesmes . .	. . Nos. 4 and 34.
,, Le Quesnoy	. . No. 3 (Canadian).
,, Caudry . .	. . Nos. 3, 19, 21 and 49
,, Awoingt . .	. . Nos. 38, 45 and 59.
,, Delsaux Farm	. . Nos. 46 and 29.
,, Ytres . .	. . No. 18.
,, Grevillers	. . No. 56.
,, Beaulencourt	. . No. 43.

Six motor ambulance convoys were allotted to the Third Army during the various periods of the advance, namely, Nos. 21, 6, 30, 27, 15 and 16. They were allotted for work with corps or as Army reserve.

The advanced depôts of medical stores in the Army were No. 15 at Frévent throughout the operations, No. 16 at Wavans, moving during the operations to Bac-du-Sud (Bailleulval) and Cambrai, and No. 34 at Gézaincourt and, from the beginning of October, at Grevillers.

Medical Services with the First Army.

The First Army did not become engaged in the active operations of the advance until the 26th August. At that time the situation of its casualty clearing stations was as follows :—

At Anvin	Nos. 2, 15 and 23.
,, Ligny St. Flochel	Nos. 7, 33 and 1.
,, Pernes	Nos. 6, 13 and 22.
,, Wavrans ..	No. 30.
,, Mingoval ..	Nos. 42 and 57.

No. 12 Stationary Hospital at St. Pol was also under the First Army administration.

Consequently, the distance from the front line of the most forward casualty clearing stations at Mingoval, north of Aubigny, on the 26th August was about twelve miles, and of those further back some twenty or more miles. The two casualty clearing stations at Aubigny had been moved to Mingoval during the earlier part of August in consequence of their positions near the railway station at Aubigny having become dangerous from long-distance artillery fire and air raids. Up to the 25th August the D.M.S. of the Army, Maj.-General H. Thompson, and his staff had no information regarding the impending operations. He had gone on leave only three days before the attack took place, but returned on the 28th August.

The Battles of Arras.—Immediately after the attack was launched by the First Army on the 26th August, No. 23 C.C.S. was moved to the old casualty clearing station site at Agnez-les-Duisans. The D.M.S. of the Army had continued his policy of placing his casualty clearing stations under the administrative control of Corps D.Ds.M.S. Consequently, on the 27th August, responsibility for control of the C.C.Ss. of the Army

had to be determined, and the D.M.S. issued the following orders :—

" To be administered by the VIIIth Corps :—
Nos. 1, 7 and 33 C.C.Ss. at Ligny and No. 30 C.C.S. at Wavrans.
" To be administered by the Canadian Corps :—
Nos. 42 and 57 C.C.Ss. at Mingoval, and any casualty clearing station, Nos. 23, 1 (Canadian) and 4 (Canadian), moving to or due to arrive at Agnez-les-Duisans.
" To be administered by the Ist Corps :—
Nos. 6, 13 and 22 C.C.Ss. at Pernes.
" To be administered by the XXIInd Corps :—
Nos. 2 and 15 C.C.Ss. at Anvin."

No. 12 Stationary Hospital at St. Pol remained under the administration of the D.M.S.

The number of wounded received into the First Army casualty clearing stations between the 26th and 31st August was : officers 412, other ranks 9,310, German officers 12, German other ranks 535.

On the 28th August No. 23 C.C.S., and on 1st September No. 1 (Canadian) and No. 4 (Canadian) C.C.Ss., arrived at Agnez-les-Duisans.

The Battle of the Canal du Nord.—The line of the First Army was advanced to near the Canal du Nord, between the Arras–Cambrai and Bapaume–Cambrai roads, by the 2nd September, when there was a lull in the fighting on this front until the 27th September. No further moves of casualty clearing stations were made until the 12th and 16th September, when Nos. 6 and 15 C.C.Ss. were moved to Ruitz and placed under the administration of the Ist Corps D.D.M.S. The Indian section of the Lucknow C.C.S. was also attached to No. 6 C.C.S. at Ruitz. Later on casualty clearing stations were moved up on the right of the First Army front to Ficheux and Boisleux-au-Mont, in an area recently taken over from the Third Army. Nos. 22, 30 and 33 C.C.Ss. were transferred to this locality just before the attack of the 27th September against Bourlon and Cambrai in conjunction with the Third Army. At the same time the casualty clearing station positions at Ruitz and Pernes came into the Fifth Army area, and Nos. 13 and 15 C.C.Ss. were then transferred to that Army. No. 6 C.C.S., however, remained at Pernes as a First Army unit.

During the operations of the 27th September and following days, No. 1 C.C.S., at Boisleux-au-Mont, acted as a casualty clearing station for walking wounded ; and Nos. 22, 30 and 33, at Ficheux, as casualty clearing stations for severely wounded. The wounded were being brought back to the

railway station at Boisleux in closed trucks from Quéant on a broad-gauge line of railway. Boisleux railway station was only 200 yards from No. 1 C.C.S. and arrangements were made there for the lying down wounded to be received and taken on by road to the casualty clearing stations at Ficheux. In advance of Quéant there was a good network of field railways. Otherwise the only main route of evacuation which could be followed was the Arras–Cambrai road, and it was under shell fire and heavily congested with traffic. Roads south of the main road were in bad condition and mostly ran north and and south ; that is to say in a lateral direction and not directly back from the battle zone.

The Third Army had two casualty clearing stations at this time also at Boisleux-au-Mont, with a special siding for ambulance trains, but this was not at the disposal of the First Army, which had consequently to send its lying down wounded to Ficheux, to be entrained there.

The number of wounded received into medical units of the First Army during the September operations was as follows :—

	Offs.	O.R.	German.	
			Offs.	O.R.
Sept. 1st to 7th	491	10,275	44	959
Sept. 21st to 28th	351	7,276	41	725
Sept. 29th to Oct. 5th ..	336	7,555	5	376

During this period the D.M.S. carried out the policy of evacuation of wounded direct from advanced dressing stations to casualty clearing stations without an intermediate main dressing station ; but what he had in fact abolished was the advanced dressing station, as the resources of the field ambulance tent divisions were concentrated at these dressing stations. The real advanced dressing stations were the collecting posts at which wounded were loaded on wheeled conveyances for transport to the dressing station. Owing to the bad state of the roads the broad-gauge railway from Quéant to Boisleux was of immense assistance during the advance on Bourlon and Cambrai.

The Battle of Cambrai.—On the 9th October the Canadian Corps on the right of the First Army resumed the attack on Cambrai in conjunction with the operations of the Third Army, and advanced to the east of the town with less than 200 casualties. Owing to the rapid advance the D.M.S. of the

First Army immediately ordered up No. 2 C.C.S. from Anvin and No. 57 C.C.S. from Mingoval on the following day by rail to near Quéant, which was then the most forward railhead. Nos. 42 and 7 C.C.Ss. were also ordered to close and be ready to move from Mingoval and Ligny St. Flochel. These casualty clearing stations, however, were not moved till much later, but No. 1 and No. 30 from Boisleux and Ficheux were moved to buildings at Escaudoeuvres, north-east of Cambrai, on the 18th and 20th October in anticipation of further fighting.

A large civil hospital was in use as a corps rest station at Cambrai. It was placed under the administration of No. 22 C.C.S., which was brought up from Ficheux on the 25th October. At the same time No. 23 C.C.S. was moved forward from Agnez-les-Duisans to Brebières, three miles south-west of Douai on the Arras road, and No. 42 from Mingoval to Douai; both units being accommodated in large buildings. No. 1 and No. 4 Canadian C.C.Ss. were next selected for transfer from Agnez-les-Duisans to a more forward area. The former was transferred to large buildings at Auberchicourt, between Douai and Valenciennes, and the latter to a large château in the Bois de Montigny about three miles north of Auberchicourt, which had originally been used as a sanatorium for tubercular diseases. No. 6 C.C.S., which had been at Ruitz in the Fifth Army area, was also moved to the Bois de Montigny at the end of October.

The Final Advance.—During October the First Army did not suffer many casualties as compared with the Third and Fourth Armies, with which it was co-operating; and the strain on its medical units was not great.

Between the 5th October and 2nd November the number of wounded received into them was :—

	Offs.	O.R.	German.	
			Offs.	O.R.
Oct. 6th to 12th	—	4,337	4	149
Oct. 13th to 19th	149	3,517	—	42
Oct. 20th to 26th	120	2,191	4	160
Oct. 27th to Nov. 2nd ..	143	2,839	11	381

The majority of the wounded in the last period were wounded on the 1st November, when the Canadian and XXIInd Corps advanced on Valenciennes. Between then and the date of the Armistice 118 officers, 2,317 other ranks and 4 German officers and 105 German other ranks were wounded.

The situation as regards the casualty clearing stations of the First Army at the time of the Armistice was as follows :—

No. 4 (Canadian) C.C.S. was opened at the " Collège des Jeunes Filles," Valenciennes, for all serious cases of all three corps of the First Army.

Lighter cases of wounds and sickness were transferred by motor ambulance convoy from the VIIIth Corps to Nos. 6 and 42 C.C.Ss. at Bois de Montigny and Douai ; from the Canadian Corps to No. 1 (Canadian) C.C.S., at Auberchicourt, and to Denain, where No. 33 C.C.S. had been moved into a large Technical School ; and from the XXIInd Corps to No. 22 C.C.S at Cambrai, and Nos. 1 and 30 at Escaudoeuvres.

Nos. 2 and 57 C.C.Ss., at Quéant, were moving to Valenciennes, and No. 23, at Brebières, was being closed. No. 7 remained in the back area at Ligny St. Flochel. On arrival at Valenciennes No. 57 C.C.S. was established in the Convent of St. Saulve, a suburb of the town, and No. 2 in the " Hospice des Petites Soeurs des Pauvres " for the reception of French and Belgian civilian sick and wounded.

No. 8 (Canadian) Stationary Hospital was being brought up to the Bois de Montigny ; and No. 6 C.C.S. then moved to a college in Valenciennes. Nos. 1, 23 and 30 C.C.Ss. were then ordered to close and remain parked.

Medical Services with the Fifth Army

The Fifth Army was reorganized as such at the end of June 1918 under the command of General Sir W. Birdwood, but it had no D.M.S., until 22nd July, when Major-General J. J. Gerrard was appointed. Lieut.-Colonel Boylan Smith, however, was A.D.M.S., and carried on the administrative duties till then. Colonel Frankau was appointed consulting surgeon and Colonel Miller consulting physician.

On the 1st July the Fifth Army took over one of the areas of the First Army, in the neighbourhood of Aire and Therouanne, with the XIth and XIIIth Corps. The following medical units were then in the area :—

Casualty Clearing Stations—

At Aire, Nos. 51 and 54.
At Elnes, No. 8.

Motor Ambulance Convoys—

No. 22 at Ferfay with XIIIth Corps.
No. 25 at Aire with XIth Corps.

Mobile Laboratories—
No. 9 (Hygiene) at Therouanne.
No. 20 (Bacteriological) at Aire.
Stationary Hospital—
No. 39 at Fort Gassion, Aire.

No. 43 M.A.C. was added to the medical units as Army reserve convoy on the 6th July, and No. 32 C.C.S. on the 10th July. On the 14th July No. 51 C.C.S. was moved back from Aire to Coyecque, four miles south-west of Therouanne. The general policy during July was in fact to withdraw medical units from Aire, as they were liable to be shelled and bombed, and leave only an advanced operating centre in No. 54 C.C.S. which had replaced No. 39 Stationary Hospital at Fort Gassion. Consequently, the medical situation in the Fifth Army at the time of the British advance was as follows :—

No. 39 Stationary Hospital	parked at Desvres.
Nos. 8 and 32 C.C.Ss. ..	at Elnes
No. 51 C.C.S.	at Coyecque.
No. 54 C.C.S.	at Aire.
No. 1 Advanced Depôt of Medical Stores.	near Elnes at Wavrans sur l'Aa.
No. 22 M.A.C.	with XIIIth Corps at Ferfay.
No. 25 M.A.C.	with XIth Corps at Fort Gassion, Aire.
No. 43 M.A.C.	as Army Reserve at Clety.
No. 9 (Hygiene) Laboratory	at Therouanne.
No. 16 (Bact.) Laboratory	at Elnes.
No. 20 (Bact.) Laboratory	at Coyecque.
No. 39 (Bact.) Laboratory	at Fort Gassion.

A Portuguese division was with the Fifth Army with Nos. 4, 6 and 8 Portuguese field ambulances.

Immediately after the success of the Fourth Army offensive the D.M.S. of the Fifth Army commenced to move his casualty clearing stations forward again. He brought No. 32 up to Lozinghem Château, and had it replaced at Elnes by a new casualty clearing station, No. 63, which had been sent to it from Senlis after the operations of the British with the French Groupe d'Armées de Reserve on the Marne.

A second advanced depôt of medical stores, No. 31, was also sent to the Fifth Army and placed at Fort Gassion, Aire.

The Fifth Army, throughout the advance to victory was engaged in following the enemy in his retreat from the area between Armentières and Lens. There was no

serious resistance, and the Army entered Lille in the middle of October without opposition.

The number of wounded received into its C.C.Ss. during different periods of its advance was consequently small, as is shown in the following table :—

	Offs.	O.R.	Germans.	
			Offs.	O.R.
Sept. 1st to 7th	34	804	—	6
Sept. 21st to 28th	30	484	—	8
Sept. 29th to Oct. 5th ..	79	1,179	—	22
Oct. 6th to 12th	26	629	—	2
Oct. 13th to 19th	30	658	—	1
Oct. 20th to 26th	28	633	—	3
Oct. 27th to Nov. 2nd ..	45	1,087	—	—
Nov. 3rd to 9th	33	1,038	1	2

In the middle of September the Ist Corps, in the northern sector of the First Army, was taken over by the Fifth Army, and with it one of the casualty clearing stations at Pernes (No. 13) and one at Ruitz (No. 15), together with No. 12 M.A.C. Two casualty clearing stations of the Second Army, Nos. 1 and 2 (Australian), were also given to the Fifth Army and placed in St. Venant on the 15th September. Thereafter the casualty clearing stations followed the advance of the Army in the following order :—

Date.	C.C.S.	From.	To.
Oct. 10th ..	No. 13 ..	Pernes ..	Cambrin.
,, ,, ..	No. 54 ..	Aire	Cambrin.
,, ,, ..	No. 51 ..	Coyecque ..	Estaires (Nouveau Monde).
,, 12th ..	No. 2 Aust.	St. Venant ..	Estaires (Nouveau Monde).
,, 22nd ..	No. 15 ..	Ruitz	Don.
,, 24th ..	No. 32 ..	Lozinghem ..	Don.
,, 27th ..	No. 1 Aust.	St. Venant ..	Fretin.
,, 31st ..	*No. 63 ..	Second Army..	Lille and Ascq.
,, ,, ..	No. 13 ..	Cambrin ..	Ascq.

* Went from Elnes to the Second Army on 13th September and returned to the Fifth Army on 31st October.

No. 39 Stationary Hospital was moved to the Hôpital St. Sauveur, Lille, on the 27th October from Desvres.

The Fifth Army advanced as far as Ath, and then settled down after the Armistice in Lille and the neighbouring towns, the casualty clearing stations being established in buildings in Tournai, Courtrai, St. André and Tourcoing. Nos. 62, 11, 8 and 10 C.C.Ss. were taken over from the Second Army in the last three towns *in situ* between the 15th and 17th November. No. 54, which remained at Cambrin, Nos. 15 and 32 at Don, Nos. 13 and 63 at Ascq, and No. 51 at Tournai, where it arrived on the 12th November, were handed over *in situ* to the First Army on the 26th November.

Nos. 10, 4, 3 (Canadian) and No. 1 (New Zealand) Stationary Hospitals also came into the Fifth Army administration from the Second Army during November. They were respectively at Tourcoing, Longuenesse (with a section for Chinese at Moulle), Malassise and Bourg (near Wisques) at that time.

Medical Services with the Second Army

The Second Army advanced rapidly, experiencing much less serious opposition than the First, Third and Fourth Armies. Its operations, as already noted, were conducted under the command of H.M. The King of the Belgians, and its advance was chiefly over the devastated Ypres Salient, which had been the scene of so many battles since October 1914. It was, however, engaged in heavy fighting between the 28th September and 2nd October, with the IInd, XIXth, Xth and XVth Corps on the Ypres front, and again on the 14th and 19th October at Courtrai.

The wounded who came into the medical units of the Second Army during the advance were as follows :—

	Offs.	O.R.	Germans.	
			Offs.	O.R.
Sept. 1st to 7th	182	3,564	2	85
Sept. 21st to 28th	125	2,658	7	169
Sept. 29th to Oct. 5th ..	272	5,822	4	216
Oct. 6th to 12th	10	652	1	2
Oct. 13th to 19th	214	5,129	15	463
Oct. 20th to 26th	188	3,422	2	158
Oct. 27th to Nov. 2nd ..	66	1,350	5	154
Nov. 3rd to 9th	23	424	—	2

In the first week of August 1918 the D.M.S. of the Army, Major-General Guise Moores, had his casualty clearing stations placed as follows :—

Unit.	Locality.
No. 1 (Australian) C.C.S.	Blendecques.
No. 2 ,, ,, ...	,,
No. 36 C.C.S.	Watten.
No. 64 ,, ...	,,
Nos. 10 and 44 C.C.Ss.	Near Bergues.
No. 3 (Australian) and No. 2 (Canadian) C.C.Ss.	Esquelbecq.
No. 58 C.C.S.	Longuenesse.
No. 62 ,, ...	Arneke.
No. 18 ,, ...	Malassise.
No. 11 ,, ...	Moulle.

No. 1 (Canadian) and No. 4 (Canadian) C.C.Ss. were at Arneke, but closed, having been sent there, it will be remembered, to divert the enemy's attention from the impending attack of the Fourth Army. No. 17 C.C.S. was also with the Second Army, but was parked at Bourg, near Wisques.

There were three stationary hospitals, No. 10 at Clerques (near Licques), No. 4 at Arques, and No. 1 (New Zealand) at Bourg. No. 9 B.R.C.S. Voluntary Hospital (Millicent, Duchess of Sutherland's) was at Longuenesse, but closed.

Advanced depôts of medical stores were at Blendecques (No. 2), Arneke (No. 11) and Esquelbecq (No. 2 Canadian).

The mobile laboratories with the Army were :—

No. 1 (Bact.) with No. 10 C.C.S. near Bergues.
No. 8 (Bact.) with No. 64 C.C.S. at Watten.
No. 11 (Bact.) with No. 2 (Australian) C.C.S. at Blendecques.
No. 4 (Hygiene) at Bourg.

The motor ambulance convoys were Nos. 2, 4, 5, 14, and 20. Nos. 4 and 14 were attached to the IInd and XVth Corps respectively. The others were directly under the control of the D.M.S., with two sections of No. 2 attached to the XIXth Corps and one of No. 5 to the Xth Corps. There was also a voluntary convoy of the First Aid Nursing Yeomanry (F.A.N.Y.) consisting of thirty cars for local duty at St. Omer, under the A.D.M.S., whose area was then in the Second Army.

In August the Second Army was engaged in minor operations, during which Oultersteene was occupied on the 18th August and Bailleul on the 30th of the month. As the enemy was then retiring preparations were made for moving casualty

clearing stations forward. No. 17, after a trial move with nine lorry loads to Arneke, was opened there on the 27th August, but was transferred to Ana Jana Siding on 4th September together with No. 1 (Australian) and No. 2 (Australian) C.C.Ss. No. 4 Stationary Hospital was, however, being moved from Arques to Recques in a back area.

At the beginning of September the IInd American Corps went into line with the Second Army, in the Canal and Dickebusch sectors, before its transfer to the Fourth Army.

On the 14th and 19th September, No 1 (Australian) and No. 2 Australian C.C.Ss. left the Second for the Fifth Army, and were replaced by No. 8 and No. 63 at Ana Jana Siding and Ebblinghem respectively. There was then a general move forward of the casualty clearing stations to the old casualty clearing station sites behind the Ypres salient as follows :—

C.C.S.	From	To
No. 36	Watten	Rousbrugge.
No. 3 (Australian) ..	Esquelbecq	Haringhe (Bandaghem).
No. 2 (Canadian) ..	Esquelbecq	Remy Siding.
No. 10	Near Bergues.. ..	Remy Siding.
No. 62	Arneke	Remy Siding.

The moves were made in fifty lorries placed at the disposal of the D.M.S. for the purpose.

No. 9 B.R.C.S. hospital was also permitted at the same time to move forward to Ana Jana Siding.

Nos. 58 and 18 C.C.Ss. at Longuenesse and Malassise were closed, preparatory to their being transferred at the end of the month to the Third Army ; and No. 10 Stationary Hospital was then ordered to move into the hospital huts at Longuenesse.

The Battle of Ypres.—During the attack and rapid advance beyond the Messines and Passchendaele ridge between the 27th and 30th September, the conditions affecting evacuation of wounded in the Second Army became very difficult. There was incessant rain on the 30th September and the roads on the Passchendaele ridge were much damaged. Consequently wounded had to be carried back long distances by hand to main dressing stations.

After these operations the two casualty clearing stations furthest back, No. 11 from Moulle and No. 44 from Bergues, were brought forward to Brielen, near Ypres, on the 6th and 7th October, and No. 36, from Roosbrugge, was also transferred there a few days later. At the same time No. 3 (Canadian)

Stationary Hospital, which it will be remembered had been sent from the Citadel, at Doullens, to Rouen on the 18th August, was brought up to the Second Army area and opened at Malassise.

The Battle of Courtrai.—During the whole of the last two weeks in October, the Second Army continued to make rapid advances in Belgium, at times against strong resistance, and by the end of the month had passed through Roubaix, Tourcoing, Menin and Courtrai, and had reached the line of the Scheldt. There was consequently a wide area of devastated country between the divisions of the army and the

No. 63 Casualty Clearing Station at Ebblinghem, 1918.

casualty clearing stations across which ambulance transport by road or rail was for a time extremely difficult. Fortunately the buildings in towns and villages east of the Passchendaele ridge had not suffered much damage and were available for medical units.

No. 8 and No. 17 C.C.Ss. were moved to Les Trois Tilleuls on the 20th October; Mouveaux was occupied by No. 2 (Canadian) C.C.S. on the 22nd October; No. 64 and No. 3 (Australian) C.C.Ss. were moved to Dadizeelehoek on the 23rd October; No. 11 was moved to St. André on the 26th October; No. 10 to Tourcoing on the 1st November, and No. 44 to Courtrai (Heule) on the 3rd November. These last two units were moved by rail from Brielen and Remy Siding.

On the 6th and 7th November, No. 36 C.C.S. was brought up to Sweveghem (St. André) and No. 17 to Deerlyck (Tourcoing). The voluntary hospital, No. 9 B.R.C.S., was also brought by rail into Belgium and placed at Roubaix on the 4th November.

Some further moves took place just before the Armistice, when the situation of medical units in the Second Army was as follows :—

Deerlyck	..	No. 17 C.C.S.
Mouveaux	..	No. 2 (Canadian) C.C.S.
Dadizeelehoek	..	No. 64 and No. 3 (Australian) C.C.Ss.
Tourcoing	..	No. 10 C.C.S.
Sweveghem	..	No. 36 C.C.S. (closed).
Courtrai..	..	No. 44 C.C.S.
St. André	..	No. 11 C.C.S.
Roubaix	..	No. 9 B.R.C.S. Hospital (closed).

The stationary hospitals at Longuenesse, Malassise and Bourg, in the St. Omer area, were transferred *in situ* to the Fifth Army. No. 10 Stationary Hospital was, however, retained by the Second Army, and was transferred to Arneke on the 9th October. It was brought up to Tourcoing, after the Armistice, on 15th November, and was subsequently transferred to the Fifth Army area there.

The Medical Situation generally during the Advance.

In reviewing the medical situation generally during the battles the main features were the large numbers of casualties in the Fourth and Third Armies and the right of the First Army; the comparatively few casualties in the operations of the Second and Fifth Armies in Flanders, but at the same time the rapid and extensive advance of these two armies over the devastated area of the Ypres-Armentières sectors to the large towns of France and Belgium beyond; and the general handling and management of the casualty clearing stations and transport to meet these conditions. Another factor which also came into operation and affected the medical services was the provision that had to be made for the civilian populations and released prisoners of war as well as for the numerous sick and wounded amongst the German prisoners.

The special medical problems of all five Armies were undoubtedly those of transport. The number of casualty clearing stations was adequate in all Armies, but they were from the very commencement much further back than in previous battles. This handicap was accentuated too by the rapidity of the advance, especially in the case of the Second

CHART SHOWING DAILY TOTALS OF ADMISSIONS TO CASUALTY CLEARING STATIONS OF THE FIRST, SECOND, THIRD, FOURTH & FIFTH ARMIES DURING "THE ADVANCE TO VICTORY 1918".

Heavy line indicates British. Light line indicates German.

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Army. Motor ambulance convoys and motor ambulance transport generally were also adequate in numbers ; the number of convoys was indeed increased at the end of October by the arrival of No. 47 and No. 48 ; but the damage to the roads and the general traffic prevented their working as rapidly and as uninterruptedly as might otherwise have been the case. They received little or no assistance from light field railways, although advantage was taken of these in places. The ambulance trains also ran with less regularity, owing to delays and damage to railway lines. There were, in fact, at times long gaps between the more advanced medical units and the nearest railheads.

It was fortunate, therefore, that the number of wounded in any one Army on any one day was considerably less than had been the case in some of the previous battles ; but the aggregate number of wounded when two or more Armies were actively fighting at the same time threw a very great strain on evacuation by ambulance trains. Consequently, there was an accumulation of wounded in casualty clearing stations, pending the arrival of the trains, which made the work in these units particularly arduous. The railheads, especially in the north, did not advance as rapidly as the troops, and the question arose whether it was best to push casualty clearing stations in advance of railheads and have two stages of road transport through casualty clearing stations to railheads or to retain the casualty clearing stations at railheads only and bring the wounded back by one long road journey on cars. As a rule the latter alternative was adopted, but in that case advanced operating centres were established, either in field ambulances or in advanced casualty clearing stations, for urgent cases and for those unfit for the long transport back.

Experimental moves of casualty clearing stations were made in some Armies to test the rapidity with which a casualty clearing station could be moved and re-establish itself, and the amount and nature of equipment that it was possible to carry on nine or more lorries. In one Army, the First, an officer and twenty-five men of the R.E. were attached to the D.M.S. staff for engineering work on the site selected for each new casualty clearing station. They were of the greatest help.

The largest number of wounded received in one day into casualty clearing stations of an Army was 7,643, on the 8th August, in the Fourth Army, but as no other Armies were then engaged this number must be regarded as small in comparison with the number of wounded on the first day of the

battles of Loos, in 1915, and the Somme, in 1916. Details of the wounded received into each Army day by day of the advance to victory will be found in Appendix C. The aggregate of wounded day by day in all Armies is shown on the chart. It will be seen that the maximum was on the 27th, 28th and 29th September. This maximum, however, did not exceed the maximum on the first days of the battles of Loos and the Somme.

One of the difficulties which arose in consequence of more than one Army being engaged at the same time was the difficulty of providing surgical teams at each of the casualty clearing stations in sufficient numbers to enable surgical work to be carried out to the same extent as in the Battles of Ypres in 1917 ; but here again the smaller number of wounded counterbalanced to some extent the smaller number of surgical teams available for each Army.

The large number of wounded enemy prisoners added greatly to the work of the medical units, as may be gathered from the statistics given above and in the appendix. The orders were to retain them for treatment in hospitals in France. The effect of this was to interfere to some extent with the arrangement by which delayed primary suture of wounds amongst the British was to be carried out at the base hospitals ; for, owing to the large number of beds occupied by German wounded, many of the British wounded had to be evacuated to the United Kingdom before primary suture was completed.

Although the number of wounded was considerably less during the fighting in open country in October and November the work thrown on the medical services was greater than ever. Influenza of a grave type, with broncho-pneumonia and other complications, attacked the troops about the middle of October, and continued till the end of the operations. During the week ending 2nd November, for example, there were 11,936 admissions, with 625 deaths, from this disease, and during the following week 11,877 admissions and 878 deaths—figures which show the extent and gravity of the epidemic.

Another source of strain on the medical services was the necessity of taking over the medical charge of large numbers of sick and infirm men, women and children amongst the civil populations of the liberated towns and villages. Casualty clearing stations such as No. 2 at Valenciennes were in some instances allotted for this work alone.

The casualties amongst the personnel of the medical services from the beginning of the advance to the time of the Armistice

were 64 officers and 249 other ranks killed or died of wounds ; and 186 officers and 1,667 other ranks wounded. Six other ranks also were missing.

Of the officers killed or died of wounds 37 belonged to the R.A.M.C., 7 to the Canadian and 6 to the Australian Army Medical Corps, 1 to the New Zealand Medical Corps, 1 to the Royal Navy, and 12 to the U.S.A. Medical Corps.

The Medical Situation after the Armistice.

After the Armistice arrangements were made for the Second and Fourth Armies, covered by Cavalry Divisions, to advance into Germany, each army consisting of four corps of four divisions each. The advance commenced on the 17th November and progressed by definite stages. The German frontier was crossed on the 1st December, and then, owing to the narrow front allotted to the British forces, the Second Army only continued its advance. It consisted of the IInd, VIth, IXth, and Canadian Corps, with eleven divisions ; the 9th, 29th and New Zealand in the IInd Corps ; the Guards, 2nd and 3rd in the VIth Corps ; the 1st, 6th and 62nd in the IXth Corps ; and the 1st Canadian and 2nd Canadian divisions in the Canadian Corps. Cologne was occupied by cavalry on the 6th December and next day by infantry brought up by rail. Cavalry crossed the Rhine on the 12th December and occupied the Cologne bridgehead. They were followed by columns of infantry who crossed at Cologne and Bonn. Eventually these towns and Düren and Euskirchen were each occupied by a corps of the Army. The Army headquarters were established at Cologne.

The Fourth Army occupied the liberated territory in Belgium, with headquarters at Namur. The Cavalry Corps established its headquarters at Spa, in the Ardennes.

The Fifth, First and Third Armies, with headquarters respectively at Lille, Valenciennes and Flexicourt (on the Somme between Abbeville and Amiens), were left to clear up the devastated areas and administer the vast numbers of labour corps troops and prisoners of war engaged in that work.

The medical services were called on to make provision for all of these and for the Armies on and behind the Rhine, as well as for the large numbers of liberated prisoners, who found their way to the British lines. Motor ambulance convoys were sent into the interior of Germany to collect prisoners who might be unable to move. Detachments of motor ambulance cars from No. 8 and No. 20 M.A.Cs. in this way explored the interior up to the Polish frontier. They all returned by 14th February except one, which had to be abandoned in the snow at Allenstein in East Prussia.

The general distribution of the casualty clearing stations and the stationary hospitals in Army areas after the new positions had been taken up was as follows :—

Second Army.	Bonn	Nos. 1 (Canadian) and 2 (Canadian) C.C.Ss.
	Cologne	Nos. 44, 36 and 64 C.C.Ss.
	Düren	No. 17 C.C.S.
	Euskirchen ..	No. 3 (Australian) C.C.S.
Fourth Army.	Charleroi ..	Nos. 20 and 55 C.C.Ss.
	Huy	No. 50.
	Maubeuge ..	Nos. 5 and 47.
	Namur	No. 48.
	Nos. 61 and 53 at Gembloux and Houyet were closed.	
Third Army.	Busigny	Nos. 12 and 37th C.C.Ss.
	Cambrai	No. 22 C.C.S.
	Caudry	Nos. 19 and 49 C.C.Ss.
	Doullens	No. 18 C.C.S.
	Grevillers ..	No. 56 C.C.S.
	Le Quesnoy ..	No. 3 (Canadian) C.C.S.
	Pont Remy ..	No. 46 C.C.S.
	Solesmes	No. 4 C.C.S.
	Tincourt	No. 58 C.C.S.
	Fillièvres	No. 6 Stationary Hospital.
	Amiens	No. 41 Stationary Hospital.
	Nos. 38, 45 and 59 C.C.Ss. at Awoingt, No. 37 at Busigny, No. 21 at Caudry, No. 29 at Delsaux Farm, No. 41 at Le Cateau, and No. 34 at Solesmes were closed.	
First Army.	Agnez-les-Duisans	No. 7 C.C.S.
	Ascq	No. 13 C.C.S.
	Auberchicourt ..	No. 23 C.C.S.
	Bois de Montigny	No. 6 C.C.S.
	Denan	No. 33 C.C.S.
	Don	No. 15 C.C.S.
	Douai	No. 42 C.C.S.
	La Louvière ..	No. 30 C.C.S.
	Mons	No. 1 and No. 4 (Canadian) C.C.Ss.
	St. Saulve ..	No. 57 C.C.S.
	Tournai	No. 51 C.C.S.
	Valenciennes ..	Nos. 2 and 32 C.C.Ss.
	Warlus	Lucknow C.C.S.
	St. Pol	No. 12 Stationary Hospital.
Fifth Army.	Ath	No. 2 (Australian) C.C.S.
	Courtrai	No. 62 C.C.S.
	Hal	No. 1 (Australian) C.C.S.
	Lillers	No. 8 Portuguese Field Ambulance.
	St. André ..	No. 11 C.C.S.
	Tourcoing ..	Nos. 8 and 10 C.C.Ss. and No. 10 Stationary Hospital.
	Longuenesse ..	No. 4 Stationary Hospital.
	Moulle	No. 4 Stationary Hospital (Chinese Section).
	Lille	No. 39 Stationary Hospital.
	Malassise	No. 3 (Canadian) Stationary Hospital.

Collecting stations for liberated prisoners of war were formed by the French immediately after the Armistice at Douai, Cambrai, Valenciennes, Maubeuge, Lille, Roubaix, Arras and Amiens in British army areas or lines of communication area, and for a time the British Medical Services assisted in the work of these centres.

CHAPTER XVIII.

THE MEDICAL SERVICES WITH THE BRITISH FORCES IN ITALY.

BRITISH medical services were employed in three different spheres of activity in Italy, namely, on the Mediterranean Line of Communication between Taranto and Cherbourg; with British artillery operating under the Italian command on the Carso, north of Trieste, until and during the Austrian offensive of October and November 1917; and with the British Expeditionary Force sent to Italy in November and December 1917 when the Italians had retired to the line of the Piave after that offensive.

The Mediterranean Line of Communication.

The formation of a Mediterranean Line of Communication, or, as it was at first designated, an Eastern Line of Communication, was the first definite organization of a British medical service in Italy. By the end of 1916 the transport of reinforcements to and the evacuation of sick and wounded by sea from Macedonia and Eastern theatres of war were interrupted by the intensive submarine warfare in the Mediterranean, and in January 1917 the possibility of establishing an overland route between Taranto and Cherbourg, thus limiting the sea passage to shorter sea routes from Egypt and Greece to the south of Italy, was considered at the War Office.

The new line was then reconnoitred in January and February 1917 by a railway and engineer staff, to which an officer of the R.A.M.C., Colonel J. C. B. Statham, was attached. Colonel Statham made a second reconnaissance in May 1917 and, after reporting on its medical and sanitary organization, was immediately afterwards appointed A.D.M.S. of the Mediterranean Line of Communication, with headquarters at Lyons. Two D.A.Ds.M.S., one for the Italian section and one for the French section of the line, and medical officers for embarkation duties at Cherbourg and Taranto were appointed to work under him. In August 1917, the headquarters were transferred to Paris and control of the line was then taken over by the War Office, Colonel Statham being graded on the 1st October as a D.D.M.S.

Tented and hutted camps were prepared at Cherbourg, St. Germain au Mont d'Or (near Lyons), Faenza (near Bologna) and Taranto, with accommodation for 2,000 men at the first three camps and for 5,000 at Taranto. Hospitals for 50 beds were organized at each, except at Taranto, which had a 200-bed hospital.

At various stations on the line, both in Italy and France, *haltes repas*, or rest and refreshment stations, were organized at four to eight-and-a-half hours' journey intervals in order to feed the men and give them an opportunity of getting out of the train. At the camps at Faenza and St. Germain they rested for four to six hours and were served with a hot meal.

Four sanitary sections were allotted for sanitary work at the camps and *haltes repas:* No. 111 Sanitary Section for Cherbourg and the *haltes repas* between it and St. Germain, No. 109 at St. Germain and for the *haltes repas* between it and the Italian frontier, No. 110 at Faenza and for the first four *haltes repas* in Italy, and No. 112 for the remaining three *haltes repas* and the camp at Taranto.

Each *halte repas* was in charge of a N.C.O. of the sanitary section and two other ranks. The equipment of a *halte repas* consisted of 4 Soyer's stoves, 125 camp kettles, 125 washing tubs and 150 latrine buckets.

In addition to the British *haltes repas* there was a series of French and Italian "*infirmeries de gare*," or medical stations, along the line at distances of about 100 kilometres apart, available to receive any sick unfit to continue the journey.

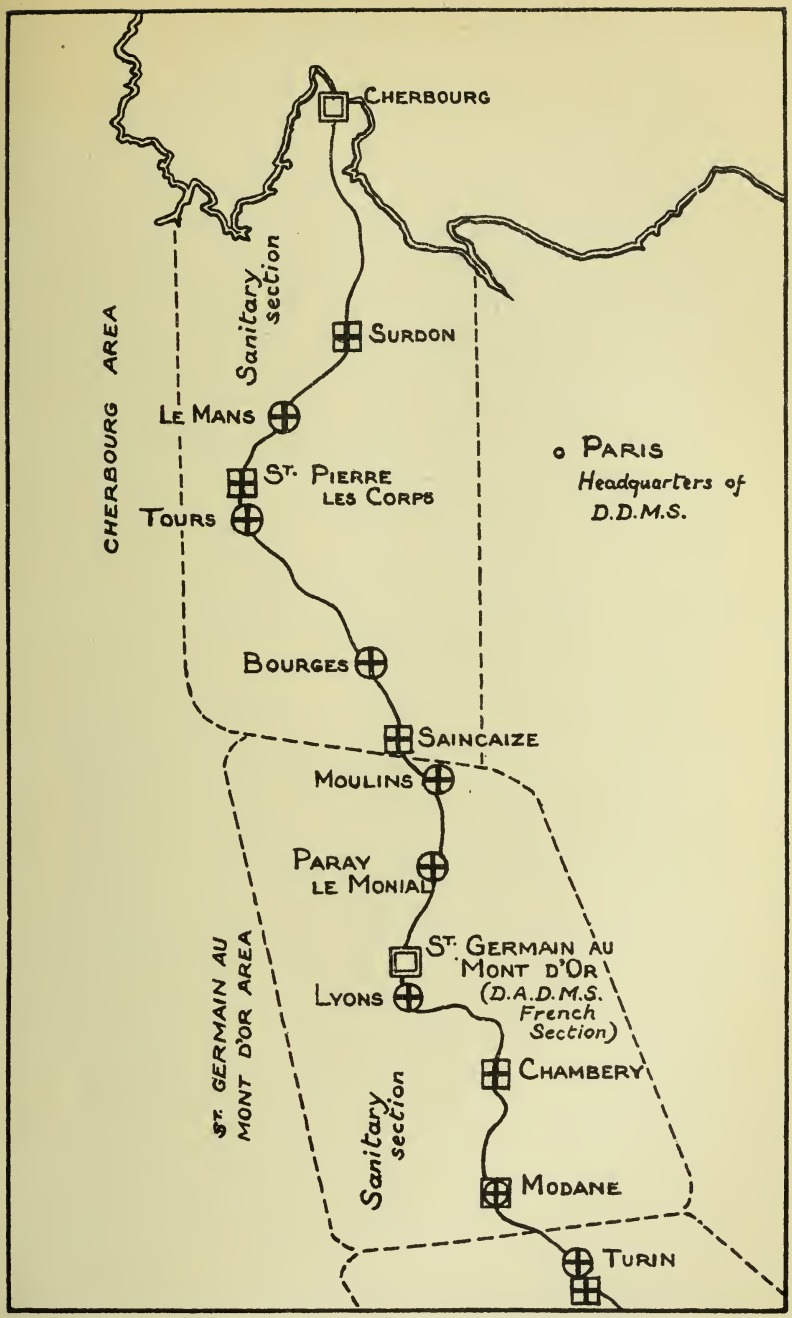
The total length of the line was approximately 1,400 miles. The whole of this medical organization, as shown on the sketch maps, was ready by the end of June 1917.

The requirements in medical personnel were 24 medical officers, 23 nursing sisters or staff nurses and 247 other ranks. Medical and surgical supplies were drawn from No. 3 Base Depôt of Medical Stores, Rouen.

At the end of June 1917, when native labour corps began to arrive at Taranto for duty on the line, additions of fifty beds for native labour were made to each of the four hospitals.

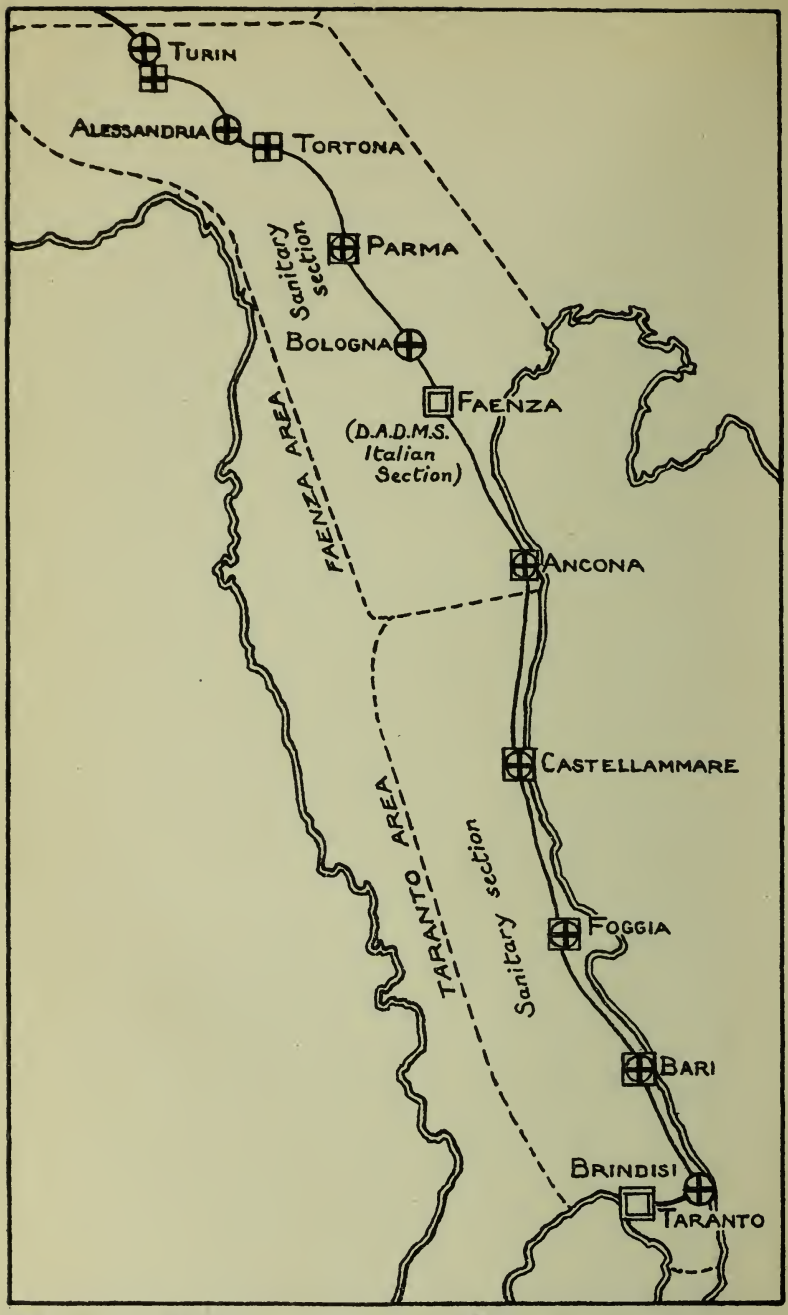
No. 35 Advanced Depôt of Medical Stores was sent to Taranto and an equipment of medical panniers, reserve dressings and fracture box was placed on each of the troop trains.

On the Italian sector of the line special arrangements had to be made in consequence of the prevalence of malaria in its more southernly portions and in consequence of the difficulties in connexion with water supply. At Castellamare



MEDICAL ARRANGEMENTS ON THE MEDITERRANEAN LINE OF COMMUNICATION, FRENCH SECTION.

13.2848 C. 5060/141. 1500. 11. 23. H.M.S.O., Cr.



MEDICAL ARRANGEMENTS ON THE MEDITERRANEAN LINE OF COMMUNICATION, ITALIAN SECTION.

13.2848 c. 5060/141. 1500. 11. 23.

H.M.S.O., Cr.

quinine and at Faenza second water bottles filled with sterilized water were issued to all troops passing southward of these places. The water bottles were collected at Taranto and re-issued for use as far as Faenza by troops proceeding northwards.

A medical officer, Major Mattei of the Australian Army Medical Corps, who was a Maltese by birth and spoke Italian, was appointed liaison officer with the Italian medical authorities and thus obviated difficulties and misunderstanding which arose at first on the Italian section owing to mutual ignorance of each other's language on the part of the British and Italian medical authorities.

These arrangements held good until a British Expeditionary Force was sent to co-operate with the Italian Army on the Austrian front, when a new line of communication was formed between Italy and Marseilles and the medical arrangements of the Italian section of the line were placed under the D.M.S. of that force.

But in the meantime Taranto as a base had grown considerably in size and importance, and in September 1917 it became necessary to expand both the European and native hospitals there to 500 beds each, and to employ five additional sanitary squads. Segregation camps for both Europeans and natives, and also a native labour transit camp, were formed. The expanded European hospital was then designated No. 79 General Hospital, and the hospital for native labour No. 6 Native Labour Hospital. No. 79 General Hospital was equipped for 1,100 beds, and there was, in addition, a small hospital for the British West India battalions which were on duty there.

The camps at Taranto at that time were organized to accommodate about 10,000 in huts and tents. Owing to the prevalence of malaria in the locality all the huts were made mosquito-proof and mosquito nets were supplied for use in the tents.

Much difficulty was experienced at first in maintaining a satisfactory standard of sanitation in these camps, owing to troops passing through them in large numbers before constructions had been completed, but on the whole a high standard was eventually obtained. Lieut.-Colonel Robertson, I.M.S., was placed in sanitary and administrative charge, and Colonel Statham maintained a constant pressure on all concerned to expedite the necessary works.

The journey from Cherbourg to Taranto usually lasted two or three days, but ambulance trains conveying sick or wounded coming from eastern theatres of war completed the journey from Taranto to Cherbourg much more quickly.

Nos. 39 and 43 Ambulance Trains were employed on this duty, and proved admirably suitable for carrying sick on these long journeys. The ordinary trains carrying reinforcements were run into sidings to let the ambulance trains through. Arrangements had been made in the summer of 1917 to run a weekly service of trains for conveying 500 sick and wounded from Taranto. Two hundred and fifty were expected to be lying-down cases, and the ambulance trains were reserved for them. The remaining cases were carried in special ambulance coaches attached weekly to the returning troop trains. A large number of these cases were malaria convalescents or malaria-infected men from Macedonia, whom it was decided to send to England under what was designated the "Y" scheme.

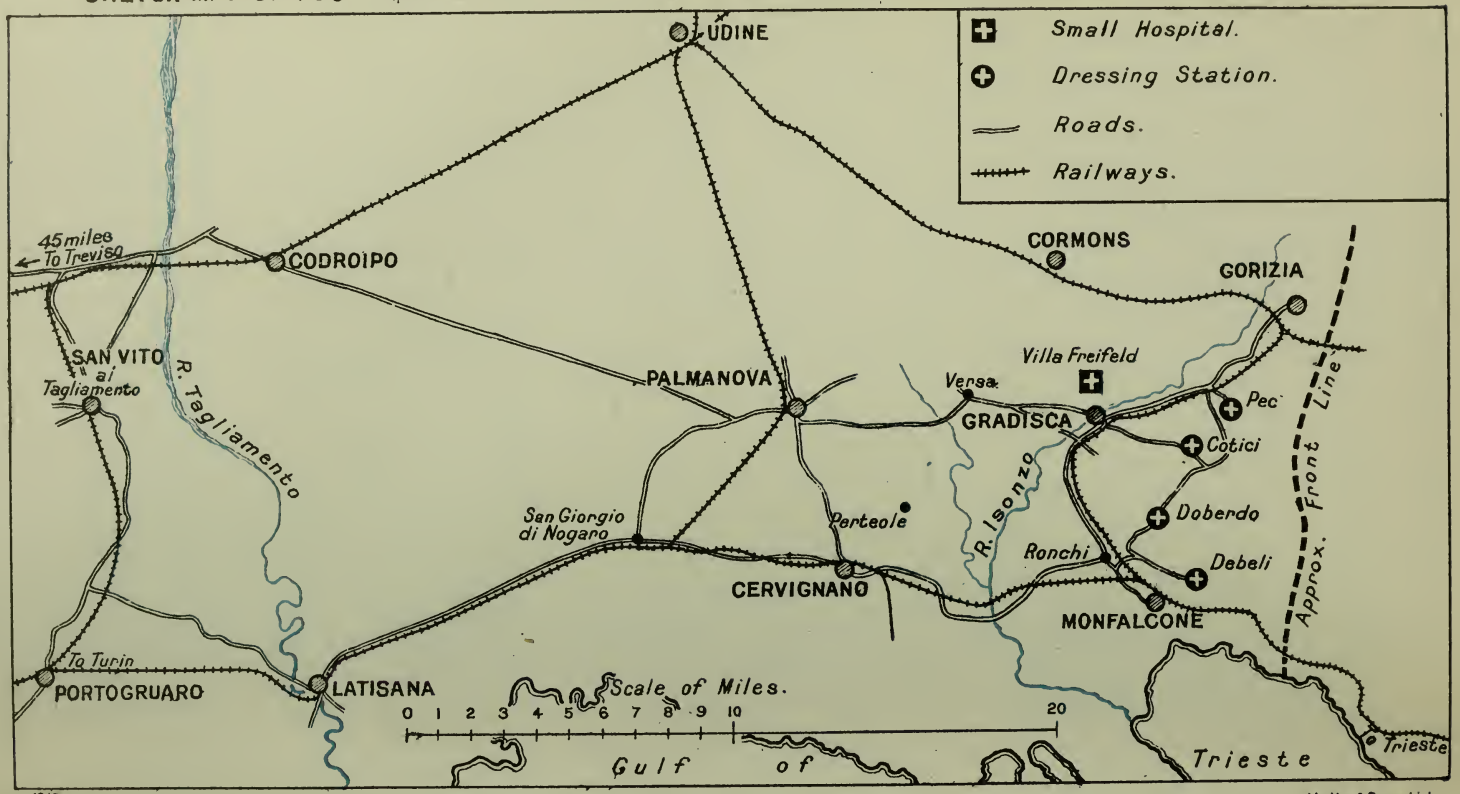
Medical Arrangements for British Artillery with the Italian Army.

While this line of communication was being established, two groups of British heavy artillery, each of four batteries, were attached in April and May 1917 to the Italian Third Army in the Carso area east of the Isonzo. To each of these batteries a medical officer, N.C.O. and four other ranks R.A.M.C. were attached. The administrative headquarters were situated at Gradisca. Major E. F. Eliot, R.A.M.C., was appointed D.A.D.M.S. for medical administrative duties and arrived at headquarters on 13th April 1917. He was invalided in August and was succeeded by Lieut.-Colonel B. H. V. Dunbar.

A hospital of fifty beds, expanded in May to one hundred and fifty under canvas, was established at Villa Freifeld, near Gradisca, under the command of the D.A.D.M.S., and two groups of two dressing stations each were organized behind the batteries for the reception of the sick and wounded before transfer to hospital. The dressing stations were at Doberdo, Debeli, Pec and Coteci, with a medical officer in charge of each. A senior medical officer was placed in command of each of the two groups, and was responsible for the general medical and sanitary condition of the areas occupied by the batteries.

Sick and wounded were evacuated from the dressing station to the hospital by six ambulance cars provided by the British Red Cross Society in Italy. The British Red Cross Society also provided equipment for the hospital, and under the British Ambassador, Sir Ronald Rodd, and Lord Monson,

SKETCH MAP OF POSITIONS OF MEDICAL UNITS WITH BRITISH ARTILLERY ON THE CARSO FRONT.



the British Red Cross Commissioner, helped in a variety of ways with personnel, equipment and transport to complete the organization of a medical service for the British artillery.

At first there was no direct line of communication between Italy and the lines of communication of the British Expeditionary Force in France. Several of the British sick and wounded had to be transferred, consequently, to Italian hospitals, and R.A.M.C. personnel was detailed for duty in them.

In the middle of May Sir Walter F. Becket, an Englishman resident in Turin, offered a hospital of fifty beds, which he was maintaining there, as an auxiliary hospital for British

Italian hospital tent.

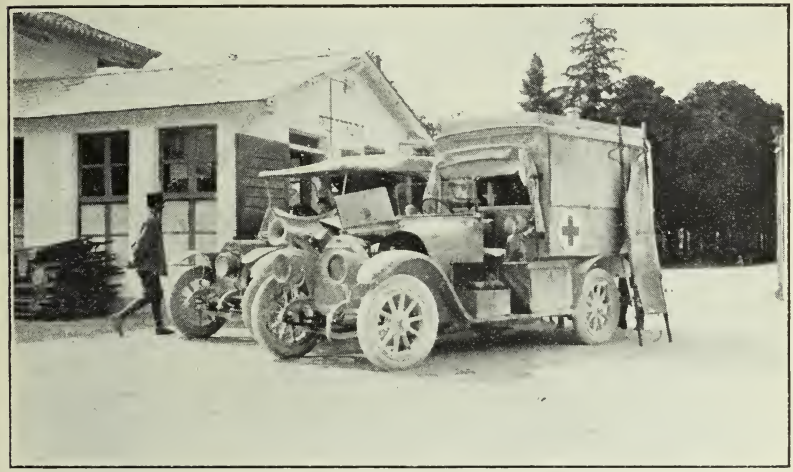
casualties. He agreed to provide and maintain the equipment, the B.R.C.S. in Italy provided the staff, and the Italian authorities provided rations. The offer was accepted, and the British authorities agreed to reimburse to the B.R.C.S. expenditure incurred in payment of the staff. An officer of the R.A.M.C. was appointed registrar, and a N.C.O., R.A.M.C., was placed in charge of stores and equipment. The hospital opened in the early part of June. In the meantime the hospital at Villa Freifeld, which was within the range of hostile artillery, was transferred to Versa, about four miles further back, as some shells had dropped in its vicinity shortly after it was opened. Ten beds, however, were retained in Villa Freifeld for sick of the headquarters staff.

A point of difficulty arose in connexion with the discharge of British sick and wounded to duty. According to the regulations of the Italian army authorities, under whose command the British artillery was placed, a soldier on discharge from hospital in an "infected" zone had to remain in a special quarantine hospital for six days before rejoining his unit. The zone in which the British artillery was operating was considered an "infected" zone, and it was necessary to send British sick and wounded to Italian quarantine hospitals for the six days before discharge. These hospitals were situated around Bologna, a highly malarious area, and the D.A.D.M.S. protested against this procedure, on the grounds that the soldiers ran greater risks of infection there. He suggested that a certificate signed by the medical officer in charge of the hospital from which the soldier was being discharged, declaring him to be free from infectious or other disease, should be accepted by the Italians in lieu of quarantine, or, as an alternative, that a convalescent camp might be established for British soldiers in conjunction with the Versa hospital, where they might be kept in quarantine for six days previous to discharge to their units. The Italian authorities, however, did not agree to this.

Owing to the insufficient number of trained R.A.M.C. with the British, and the absence of any organized R.A.M.C. unit, a scheme was submitted to the War Office for personnel to form a section of a field ambulance and a casualty clearing station, but the increase of personnel necessary for this was not sanctioned and the scheme fell through. However, one matron and ten nursing sisters were posted to the military hospital at Versa in August, 1917, when the groups of batteries were increased. The number of batteries, however, was reduced to five in the middle of October.

On the 24th October 1917 the Austrian offensive began, and lasted till the 18th November, by which date the Italian army had stabilized its front along the line of the Piave river. On the 26th October the D.A.D.M.S. was warned of its being necessary to withdraw the hospital at Versa to a site further back. The nursing sisters were sent off by train to Turin that same afternoon, and arrangements were made to evacuate the hospital. The situation on the evening of the 27th had become critical, and during the night all patients, ten lying and seventy-eight sitting, were evacuated to Palmanova by eight ambulance cars, of which the Italians provided five, and in five Italian lorries. The more valuable equipment was also collected at Palmanova.

Early on the 28th October notification was received that the patients would be entrained at 10 a.m. at San Giorgio di Nogaro for Turin. All but twenty-three convalescent patients were got away. The town was now abandoned, some houses were on fire, and the D.A.D.M.S., with the R.A.M.C. personnel and convalescents, began a march towards Codroipo. At San Vito a train was boarded, and all arrived safely at Treviso some days later. One R.A.M.C. man and three patients were captured at the Italian hospital at Perteole. With the exception of equipment and personal kits there were no other losses.



Italian motor ambulance car and service pattern stretcher.

On the 5th November Captain Laing, R.A.M.C., and thirty-five other ranks were sent to open a temporary hospital in a villa at Padova. Sick able to travel were transferred from this hospital to Turin ; others were sent to the nearest Italian hospital, or to the British hospital now opened at Faenza.

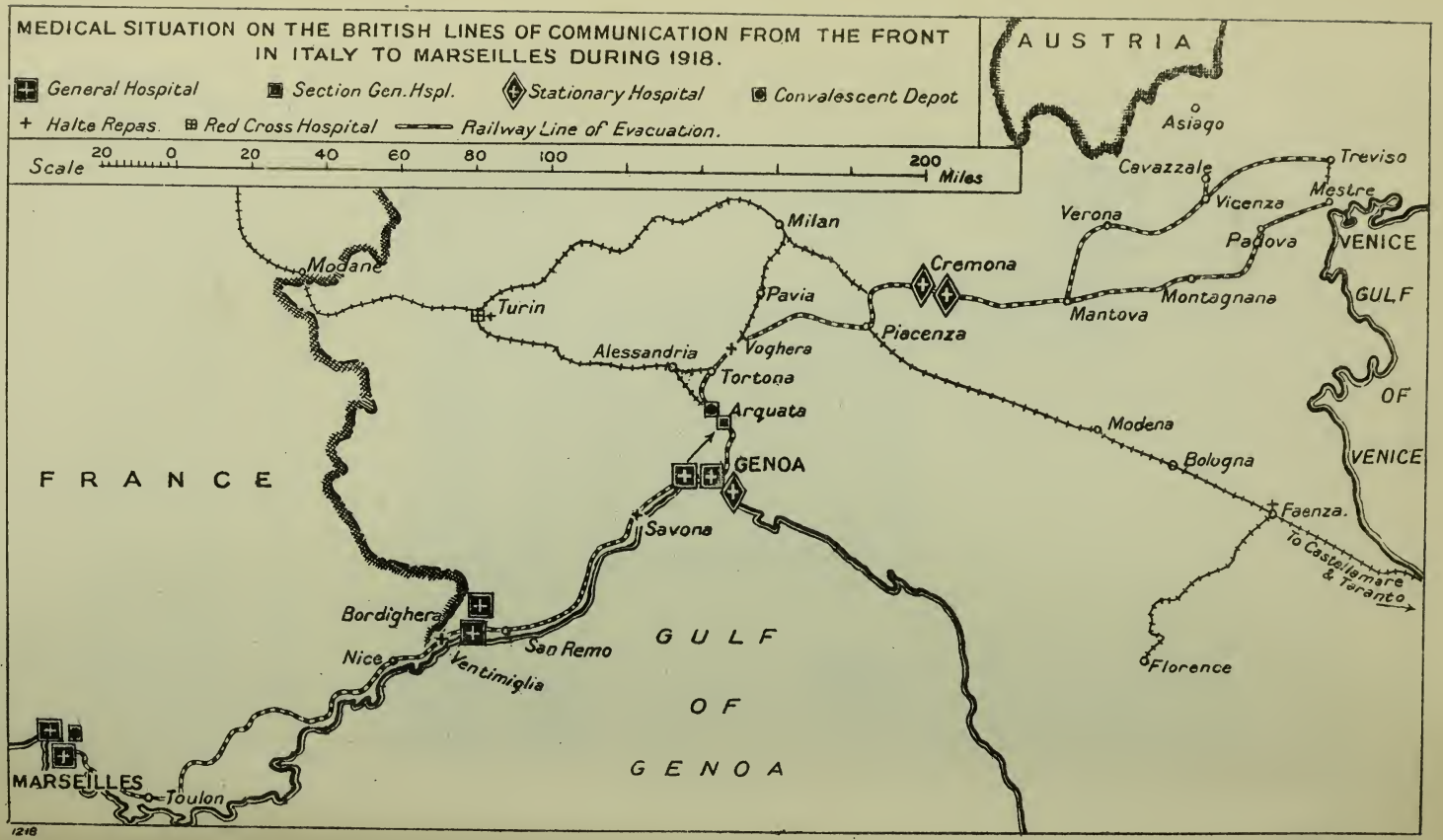
On the 7th November ten guns arrived to take up positions on the Piave. Two medical officers were with the batteries and one was with group headquarters. The D.A.D.M.S. attached two ambulance cars to the group and formed a dressing station outside Treviso to which casualties were collected previous to their evacuation to Padova Dressings, stretchers and first field dressings were obtained from the Italian authorities.

The British artillery with the Italian army was eventually absorbed into the British Expeditionary Force, which commenced to arrive in Italy at the end of the month.

Italian motor ambulance car.

Medical Services with the British Expeditionary Force in Italy.

When the Austrian offensive of October and November 1917 forced the Italian troops to withdraw from their positions on the Carso east of the Isonzo river to the line of the Piave, a British and a French expeditionary force were sent from France to Italy to reinforce the Italian field armies.


MEDICAL SITUATION ON THE BRITISH LINES OF COMMUNICATION FROM THE FRONT IN ITALY TO MARSEILLES DURING 1918.
General Hospital
Section Gen. Hspl.
Stationary Hospital
Convalescent Depot
Halte Repas.
Red Cross Hospital
Railway Line of Evacuation.
Scale 20 0 20 40 60 80 100 200 Miles
AUSTRIA
Asiago
Cavazzale
Treviso
Mestre
Vicenza
Verona
Padova
VENICE
GULF
OF
VENICE
Milan
Cremona
Pavia
Piacenza
Mantova
Montagnana
Modane
Turin
Alessandria
Voghera
Tortona
Arquata
GENOA
Savona
Modena
Bologna
Faenza.
To Castellamare & Taranto
Florence
FRANCE
Bordighera
Nice
Ventimiglia
San Remo
GULF
OF
GENOA
MARSEILLES
Toulon
1218
Malby & Sons, Lith.

The British force consisted of the XIVth Corps, with the 23rd, 41st and 7th Divisions, the XIth Corps, with the 5th and 48th Divisions, and various corps, army and line of communication troops. It absorbed, as just noted, the British artillery that had been operating with the Italian Third Army, and also the Italian section of the Mediterranean L. of C.

Previous to the arrival of the British Expeditionary Force the routes of approach and lines of communication from and to France, and the areas which the force would occupy in Italy, were reconnoitred and reports were furnished on the medical and sanitary aspects of a campaign in Italy by Colonel F. Newland, then D.D.M.S. of the XVth Corps, who had been selected for transfer to the XIVth Corps, and by Lieut.-Colonel S. L. Cummins, both of whom had been specially detailed to do so in anticipation of the move of the troops. It was decided to adopt a new line of communication by the coast route from Marseilles to Genoa, leaving, however, the Mediterranean line of communication undisturbed, as it was to be used by a similar force of French divisions. *Haltes repas*, as in the case of the latter, were formed along the route of movement of the troops from Amiens through Dijon to Lyons and thence to Genoa by Marseilles and Ventimiglia.

A base for the force was formed at Arquata, some twenty miles north of Genoa on the main line of railway to Alessandria and the large cities in the north-west of Italy. Lieut.-Colonel S. L. Cummins was then appointed A.D.M.S. of the Base, and Colonel F. R. Newland, with the rank of Surg.-General, D.M.S. of the Force. Colonel Whaite, who had replaced him as D.D.M.S. of the XVth Corps, was brought back to the XIVth Corps as its D.D.M.S.

A General Headquarters was formed of the headquarters staff of the Second Army from France, and the British forces in Italy came thus under the command of General Sir H. Plumer. Lieut.-Colonel Chopping and Captain Coplans, the A.D.M.S. and D.A.D.M.S. (Sanitation) of the Second Army, remained in these appointments on the staff of the D.M.S. in Italy; Surg.-General R. Porter, the D.M.S. of the Second Army, accompanied the staff to Italy, but was due to retire shortly afterwards under the age clause, and, as Surg.-General Newland had already been appointed D.M.S. in Italy by the War Office, he returned to France immediately after his arrival.

The lines of communication in Italy between the front and the base were under an Inspector-General of Communications,

Lieut.-General Sir H. M. Lawson, appointed on the 15th November 1917. He made Mantova his headquarters at first, but moved in December to Tortona, some fifteen miles north of Arquata and twelve miles east of Alessandria. He had no administrative medical staff with him at first, and Lieut.-Colonel Cummins acted as a D.D.M.S. of the L. of C. as well as A.D.M.S., Base, until the arrival of Colonel J. V. Forrest as D.D.M.S., L. of C., on the 24th December 1917.

The lines of communication were then divided into two areas, the Base area, which included Genoa and Bordighera, and the Cremona area, which stretched from Mantova to Turin. The lines of communication command also extended to the Italian section of the Mediterranean L. of C., which, as shown on the sketch map, was also divided into two areas, the Faenza area, from Castellamare to Modane, and the Taranto Base area, from Castellamare to Taranto.

Major C. H. Furnivall, who had been D.A.D.M.S. under Colonel Statham of the Italian section of the Mediterranean L. of C., was appointed D.A.D.M.S. to Colonel Forrest on the 19th January, with Captain J. D. Wells as a D.A.D.M.S. for ambulance trains. No sanitary officer was sanctioned, however, for administrative sanitary duties on the lines of communication, and, in consequence, the headquarters of No. 110 Sanitary Section were transferred from Faenza to Tortona, in order that its commanding officer might act as sanitary officer on the staff of the D.D.M.S., L. of C., in addition to his other duties.

Although numerous sanitary problems arose in connexion with the new line of communication areas, the appointment of a separate administrative sanitary officer on the staff of the D.D.M.S. was for some reason or other not approved.

The field forces commenced to reach Italy early in November 1917. The headquarters staff of the XIVth Corps arrived in Milan from France on the 1st of the month. They moved to Pavia on the 2nd and to Mantova on the 8th November. The 41st and 23rd Divisions were concentrating on the 17th November in the neighbourhood of Mantova, and moved on the 23rd November to a forward area in the neighbourhood of Vicenza, while the 7th Division was due to arrive in a back area between Verona and Montagnana, the latter town becoming railhead for the corps. The headquarters of the corps then moved to Lonigo, in a central position between Verona and Montagnana. The corps relieved the Ist Italian Corps on the Piave at the beginning of December. The 41st and 23rd Divisions went into the line on the 1st and 2nd of

the month from Nervesa to Ciano, about twelve miles north of Treviso, and some twenty-five miles north of Venice, while the 7th Division, on the 3rd December, relieved an Italian division in the reserve area. They formed part of a mixed British, French and Italian Force under Sir H. Plumer.

The XIth Corps headquarters arrived at Mantova on the 2nd December. Its two divisions, the 5th and 48th, were to move to a front astride the river Brenta in the neighbourhood of Tezze and Marostica respectively, some twenty-four miles north of Padova. They formed part of a mixed Italian, French and British Force under General Duchesne of the French Tenth Army.

The British artillery groups were attached to this corps.

The British divisions remained in these positions throughout the winter, but there were no active operations.

In March 1918 the disposition of the British divisions was altered. Sir H. Plumer and his staff, the XIth Corps headquarters staff and the 5th and 41st Divisions returned to France, and the XIVth Corps, now composed of the 7th, 23rd and 48th Divisions, was concentrated near Vicenza and took over the sector on the Asiago plateau from Sculazzon to Penna. Lord Cavan, who commanded the XIVth Corps, then became General Officer Commanding-in-Chief the British Force in Italy.

The XIVth Corps as such was abolished and its headquarters became 1st échelon G.H.Q. of the force, with a 2nd échelon for directorates of administrative services at Montebello. A definite organization of the administrative medical services with G.H.Q. was then authorized by the War Office, to consist of a D.M.S., D.D.M.S., A.D.M.S., D.A.D.M.S., and D.A.D.M.S., (Sanitary). Colonel Whaite, who had been D.D.M.S., of the XIVth Corps, remained as D.D.M.S. with the 1st échelon, representing there Surg.-General Newland, the D.M.S., who established his office at Vicenza. A D.A.D.M.S. was added to the staff to assist Colonel Whaite.

The new front on the Asiago plateau was at first held by the 23rd and 7th Divisions with the 48th in reserve. In May the 11th Italian Division was added to the force on the Asiago plateau under Lord Cavan.

Outline of the Operations.

The Asiago front was attacked by the enemy on the 15th June 1918, but the British casualties were comparatively slight. This was followed by a raid on the enemy trenches by British

divisions on the 9th August, during which one of the R.A.M.C. officers, Captain W. H. Lister, was killed. The 23rd and 48th Divisions again raided the enemy's trenches on the 27th August, and two more raids were made on the 10th September.

At the end of September the 23rd and 7th Divisions were withdrawn from the Asiago front, leaving only the 48th Division in line there. The two former divisions moved in the middle of October to an area south of Treviso and west of the Treviso–Venice road, and went into line on the Piave in front of Treviso. The XIVth Corps then came into being again with Colonel Whaite as its D.D.M.S., while Lord Cavan assumed command of the Tenth Italian Army, which now included the British XIVth Corps. The 48th Division, however, remained under the Italian command on the Asiago front. Lord Cavan's army, in conjunction with the Third Italian Army on its right and the Eighth Italian Army on its left, attacked the enemy on the Piave front between the 23rd October and 4th November 1918. The 7th and 23rd British Divisions were engaged. The 48th Division was also engaged between the 29th October and 4th November on the Asiago front. The operations were continued by the British divisions in association with the Italian and French divisions both on the Piave and the Asiago front until hostilities ceased on the 4th November.

The British divisions then were withdrawn from their front lines and concentrated in an area west of Vicenza by the middle of November. Detachments were sent on the 22nd November 1918 to Fiume and on the 28th November to the neighbourhood of Innsbrück.

Demobilization commenced in December. A medical mission of a detachment of the 1/1st South Midland Field Ambulance was sent to Austria. The D.M.S., Surg.-General Newland, remained in Italy till the end of February 1919, directing the work of the demobilization of the medical services.

The Medical Arrangements.

When the British divisions commenced to arrive in Italy, much difficulty was experienced in obtaining suitable positions for the casualty clearing stations, and for establishing a line of evacuation from them to the base. There was no difficulty, however, in obtaining suitable buildings and accommodation for the base hospitals on the lines of communication at Genoa and Bordighera. Cremona was considered the most suitable

position for an advanced hospital centre, similar to the hospital centre established at St. Omer in France. It was on the line of the British retreat in the event of the enemy breaking through, and it was felt that should heavy casualties occur, its position would shorten the journey of ambulance trains to and from the front, as wounded could be unloaded there while base hospitals were being cleared to France. It was also sufficiently near the front to allow of motor ambulance convoys taking wounded there direct from the field ambulances in the event of casualty clearing stations being obliged to close and retire.

Some opposition was made to the British establishing hospitals in Cremona, but the difficulties were overcome, and No. 29 Stationary Hospital from Salonika was in full working order there, with accommodation for 600, by the beginning of December. No. 30 Stationary Hospital from Salonika was also opened at Cremona shortly afterwards. At the same time No. 11 General Hospital and No. 38 Stationary Hospital from France were established in Genoa, and Nos. 62 and 66 General Hospitals from Salonika in Bordighera. No. 51 Stationary Hospital, which mobilized in Malta, did not come to Italy until the beginning of 1918. It was divided into three sections, two were opened at Genoa, one for local sick and another for infectious diseases, and the third section acted as a station hospital at Arquata, the base headquarters.

A convalescent depôt, mobilized at Rouen, was also sent to Arquata at the end of November, but it was transferred to Genoa in January.

At Marseilles No. 57 General Hospital from Boulogne, No. 81 from Malta, and a convalescent depôt were opened at the end of 1917 and beginning of 1918 for the reception of sick and wounded evacuated from Italy.

A line of communication was thus established, with the main hospital centres at Genoa and Bordighera receiving casualties from front areas through Cremona and evacuating them to Marseilles. This arrangement held good throughout the occupation of an Italian front by British troops, the only changes being the return of No. 66 General Hospital to Salonika in April 1918, and the acquisition of the Becket Red Cross Hospital in Turin by the British military authorities in the same month. No. 66 was not replaced, but No. 62 General Hospital was expanded by taking over its site and equipment, so that there was no loss of hospital beds. The Turin hospital became a section of No. 29 Stationary Hospital at Cremona.

The selection of strategical positions for the casualty clearing stations proved difficult at first, and some anxiety was felt lest suitable arrangements should not be ready if the enemy made a determined attempt to break through immediately after the line on the Piave and Brenta had been taken up by the XIVth and XIth Corps.

During the period of concentration, Nos. 9 and 38 C.C.Ss. were opened in buildings at Canneto and in a hospital at Mantova, respectively; but they were sent to Montagnana, the railhead of the XIVth Corps, midway between Padova and Mantova, and opened there between the 25th and 29th November.

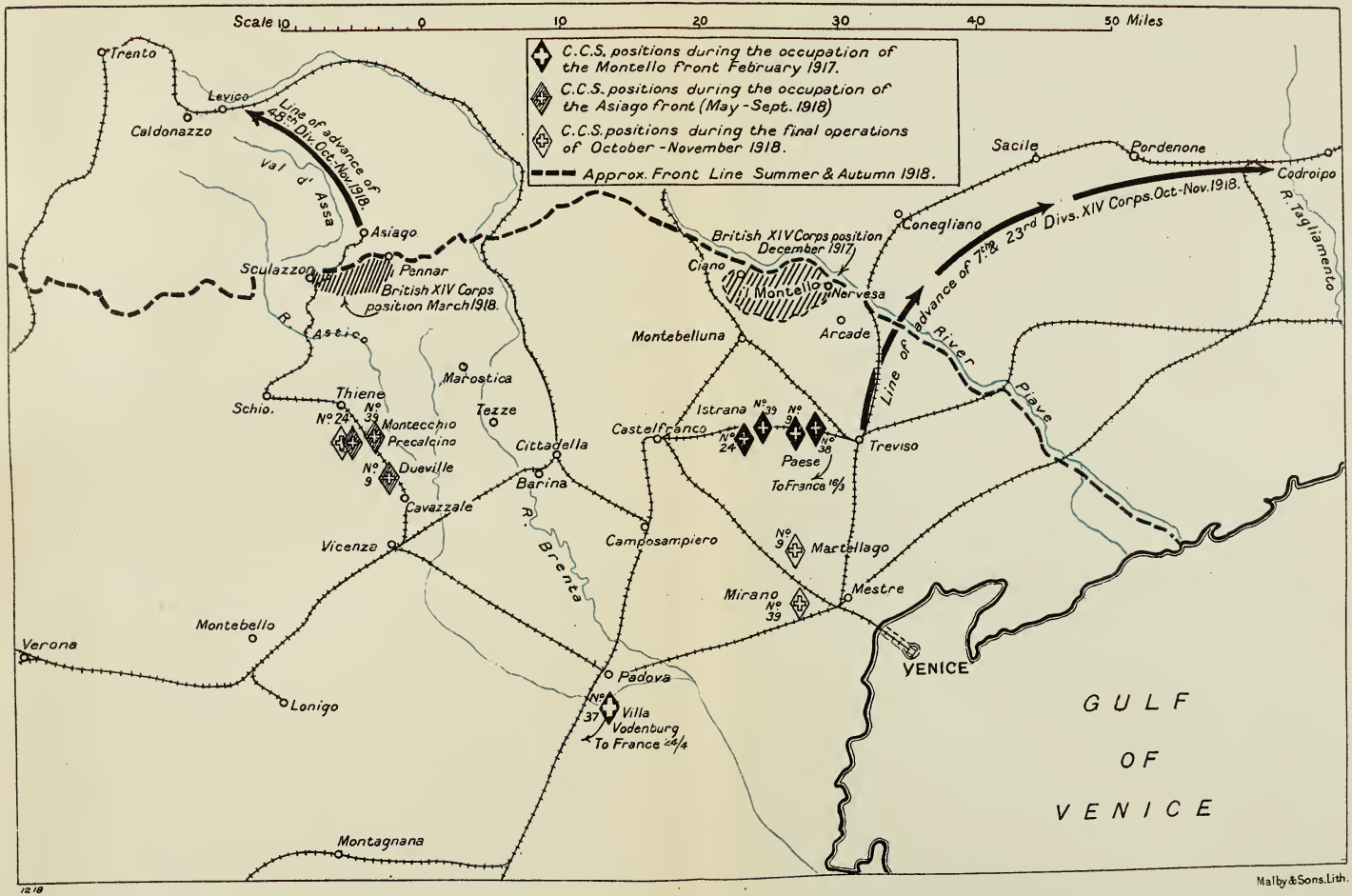
Nos. 24 and 39 C.C.Ss., on arrival in Italy, remained parked at Citadella, on the railway line between Vicenza and Treviso, ready to move forward when the British troops took over a front line. Istrana, some twelve miles west of Treviso, was then selected as the best strategical position for casualty clearing stations, and Nos. 24 and 39 C.C.Ss. were placed there early in December.

The fifth casualty clearing station, No. 37, came to Italy in the beginning of December and went to Padova, where it opened in a hospital building, but, as the Italian authorities were desirous of removing medical units from the city, it was transferred in January to a villa, about two miles south of Padova, where it remained until its return to France in April 1918.

This disposition of casualty clearing stations was suitable for operations on the Piave front, but did not satisfy the requirements of the divisions on the Brenta. Consequently Nos. 38 and 9 C.C.Ss. were removed from Montagnana in January, the former to Barina, on the left bank of the Brenta, just west of Citadella, where it opened under canvas, and the latter to Cavazzale. Until they were ready, sick and wounded of the XIth Corps were sent to No. 37 C.C.S. at Padova.

The accommodation in No. 38 C.C.S. at Barina was for 250 only in marquees, but a number of huts was to be sent there for this casualty clearing station by the Italian authorities. The marquees, owing to the intense cold of January and to the lack of coal, were far from comfortable. They were heated by oil stoves, and patients were retained in them as short a time as possible, evacuation being arranged to take place by ambulance trains every second or third day. The huts arrived on the 14th January, but, owing to the projected move of the XIth Corps from the Brenta positions to a position at Arcade

MAP OF POSITIONS OF CASUALTY CLEARING STATIONS ON THE ITALIAN FRONT.



on the right of the XIVth Corps on the Piave, they were not erected at Barina. No. 38 C.C.S. moved at the end of the month to Paese, half-way between Istrana and Treviso. No. 9 C.C.S. was also moved from Cavazzale to Paese at the same time.

The positions of the casualty clearing stations consequently at the beginning of February were as shown on the sketch map.

When the XIth Corps was withdrawn from Italy Nos. 38 and 37 C.C.Ss. returned to France with it, and the remaining casualty clearing stations were then moved to positions behind the new front on the Asiago plateau.

Nos. 24 and 39 C.C.Ss. were opened at Montecchio-Precalcino and No. 9 at Dueville. Both of these positions are close together about seven miles north of Vicenza, and between eighteen to twenty miles from the front line. They were on the plains, just south of the mountainous region leading to the Asiago plateau.

The positions of the three casualty clearing stations then remained unchanged until just before the final offensive on the Piave at the end of October, when the 7th and 23rd Divisions returned to the Piave front. No. 39 C C.S. was then moved to Mirano, six miles west of Mestre, and No. 9 to Martellago, some six miles north-west of Mestre. Both of these towns were some twenty miles distant from the Piave front, but advanced operating centres were thrown out close behind the line. No. 24 C.C.S. remained at Montecchio-Precalcino for the reception of casualties from the 48th Division, which remained on the Asiago front.

After hostilities had ceased No. 9 C.C.S. returned to Dueville and No. 39 was withdrawn to Vicenza, so that at the end of 1918 the distribution of the casualty clearing stations was :—

At Dueville .. .. No. 9.
At Montecchio-Precalcino .. .. No. 24.
At Vicenza .. .. No. 39.

The advanced depôts of medical stores were No. 32 from France and Nos. 35 and 36 from England. No. 35 had arrived in August and went to Taranto, where it remained. No. 32 was opened at Montagnana at the end of November 1917, but in February 1918 it was sent to Camposampiero, a railway junction eighteen miles north of Padova, and at the end of April to Vicenza, where it remained till the end of the year. No. 36 Advanced Depôt was at Istrana from December 1917 to April 1918, when it moved to Thiene, behind the Asiago front

and eighteen miles north of Vicenza. At the end of October it was transferred to the Piave front and opened at Treviso.

The Base Depôt of Medical Stores, No. 14, was a new unit from England. It arrived in Genoa on the 1st December 1917 and remained there.

Of the four mobile laboratories allotted to the British force, all of which came from France, No. 7 (Bacteriological) and No. 15 (Hygiene) accompanied the casualty clearing stations, while No. 14 (Bacteriological) and No. 23 (Hygiene) were placed at Genoa and Cremona respectively.

Three motor ambulance convoys accompanied the British force to Italy, two from France, Nos. 26 and 36, and one, No. 41, from England. A fourth convoy, No. 42, had been prepared in England for Italy and was to have been sent there in the latter part of February, but owing to the reduction of the divisions there and the military situation on the Western Front it was retained in France. No. 26 M.A.C. was placed at the disposal of the XIVth Corps. No. 36 went to the XIth Corps, but for a time had a section detached for duty at the base, where it was assisted at the end of 1917 by twenty cars from the British Red Cross Society. No. 41 M.A.C. did not arrive till towards the end of January 1918. It was retained as a G.H.Q. reserve.

The work of the motor ambulance convoys and the motor ambulance cars of the field ambulances was affected by the move of the British line to the Asiago plateau, where the country was Alpine in character. The roads in places had hairpin bends and steep gradients and were in places dangerous. Light vehicles were the most suitable, but most of the cars were too heavy for the work. Some, however, could negotiate the bends, but much trouble was caused by overheating of the engines during climbing. In view, consequently, of the necessity of depending largely on pack transport, a reorganization of the transport of the field ambulances became necessary, and experiments as to the most suitable form of ambulance car were conducted by Colonel Blackham, the A.D.M.S. of the 23rd Division. The Ford cars were brought to the plateau and remained there. For work on the mountain roads back from the plateau the motor ambulance cars with the less powerful engines were exchanged for those with greater power and large radiators. The Italian Fiat cars were the best for this purpose, and authority was received from the War Office for the purchase of fifty Fiat cars with a body similar to that used in the hills by the Italians. The body was of thin metal, with doors at the

MEDICAL SITUATION IN THE BRITISH XIV CORPS ON THE ASIAGO FRONT IN JUNE 1918.

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back, and carried six lying-down patients. The authority to form a convoy with Fiat cars was not received, however, till October, and the convoy had not been formed when hostilities ceased.

Considerable dislocation of the motor ambulance convoys took place in order to exchange their more powerful cars with the less powerful cars of the field ambulances, on which most of the hill work was thrown. Consequently, No. 26 M.A.C. was withdrawn to Genoa in April 1918, where it remained working at the base until the end of the year. No. 41 also was sent to Genoa during the greater part of the time when the Asiago plateau was held by the British, leaving No. 36, with the more suitable cars, as the one convoy working in the forward area. No. 41 returned to the forward area, with its headquarters at Thiene, at the end of July. During the October operations No. 36 worked on the Piave front and No. 41 on the Asiago front.

The Austrian Offensive of 15th to 24th June.

The Austrian offensive in the summer of 1918 was launched on a front of some ninety miles from the river Astico to the sea. The British forces were engaged on the 15th and 16th June, mainly on the Asiago plateau, north of the line Conco-Congollo. The 23rd and 48th Divisions were holding this position, with the 7th Division in reserve. Although the enemy penetrated the 48th Division front to a depth of about 1,000 yards on the 15th June, counter-attacks were delivered in the evening, and on the following day the original line was restored. Raids were made by troops of the 23rd Division on the night of the 21st/22nd June, and normal conditions existed on the British front by the 24th June.

The weather on the 15th June was warm and sunny.

The casualties admitted to the casualty clearing stations and evacuated from them during these operations were as follows :—

Date.	Admitted.		Evacuated.	
	Sick.	Wounded.	Sick.	Wounded.
15th–16th	349	864	89	802
16th–17th	302	204	58	176
17th–18th	314	48	43	65
18th–19th	277	15	85	10
19th–20th	226	8	156	9
20th–21st	240	5	163	3
21st–22nd	208	39	62	36
22nd–23rd	198	9	107	7
23rd–24th	210	—	79	—
Total	2,324	1,192	842	1,108

The large number of sick was due to an outbreak of influenza at the time.

The enemy used a considerable number of lachrymatory and cyanogen bromide gas shells, but the casualties from these were comparatively few.

As compared with the battles on the Western Front, therefore, the work of the medical units was easy, but they had to contend with the difficulties inherent in operations in mountainous country.

The 23*rd Division* A.D.M.S., Colonel W. Croly, had organized his field ambulances to work on two sectors, right and left. The right sector had two regimental aid posts, clearing by hand carriage to a divisional collecting post on the San Sisto road, and thence by motor ambulance car to an advanced dressing station at Pria dell'Acqua. The left sector had also two regimental aid posts, with hand carriage to a collecting post, and motor ambulance transport thence to an advanced dressing station at Capitello. The regimental aid posts were in a cave and in Italian dugouts. There was no congestion in them at any time; but the roads from them and from the collecting posts were rendered impassable to wheeled transport by the heavy barrages and by fallen trees. The wounded had consequently to be carried by hand for a considerable distance to the Val del Barenthal road on the right and to bearer posts on a new line on the left. The road to Capitello was, however, cleared and repaired by the afternoon of the 15th and the original line of evacuation restored.

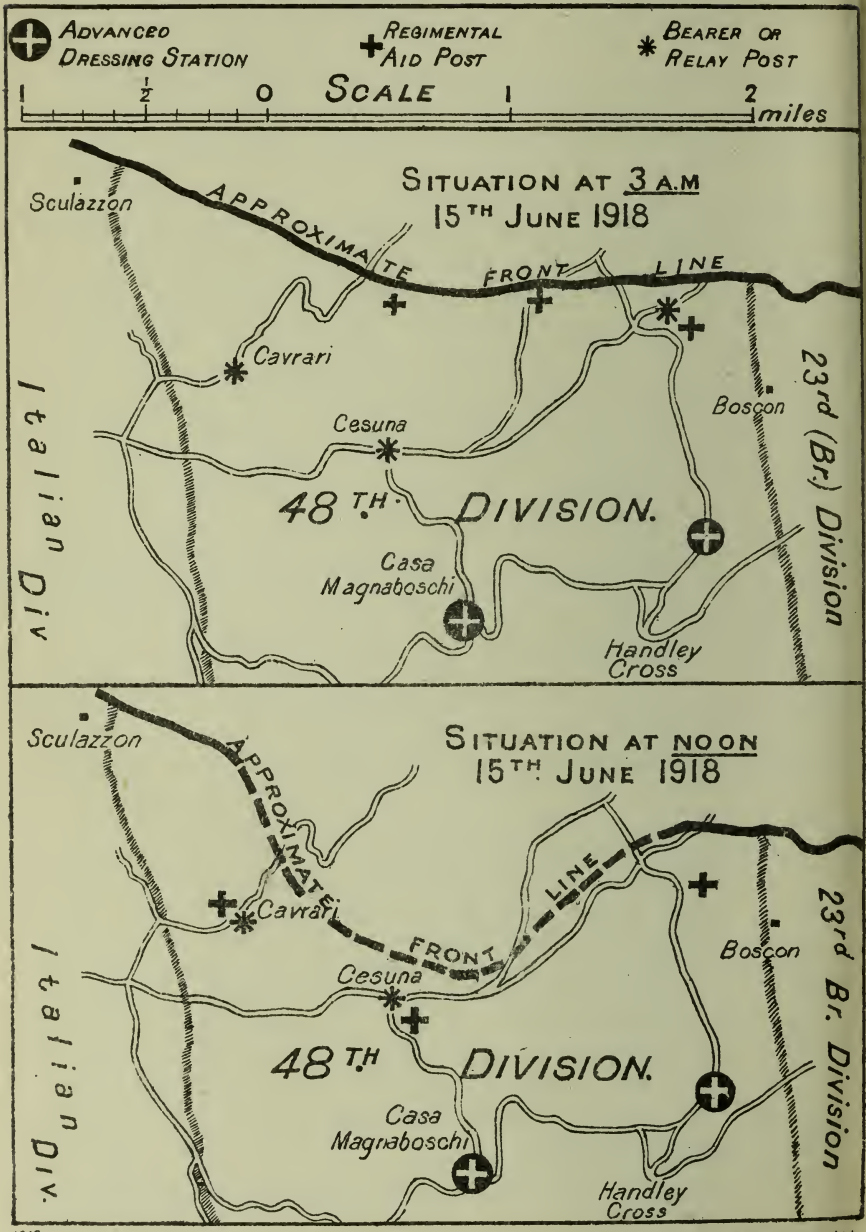
The advanced dressing stations were heavily shelled on the morning of the 15th June, but at no time was there any delay in clearing the wounded.

The main dressing station was at Granezza. The walking wounded continued to arrive at it up till noon, and after that hour the stretcher cases came in steadily. In the afternoon there was some congestion at Granezza, owing mainly to an insufficient number of motor ambulance convoy cars coming up, but evacuation proceeded normally when a circuit of cars had been established. Granezza was heavily shelled during the morning of the 15th June. It was a crowded locality, and the D.M.S. instructed the A.D.M.S. on the 19th June to seek a more suitable place for his main dressing station.*

There were some casualties amongst the R.A.M.C. of the division, one man of No. 70 Field Ambulance being killed

* In August a new dressing station was opened in seven Italian huts at Case di Mazze, in place of Granezza.

Medical Situation in the 48th Division During the Austrian Offensive of 15th June 1918



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and one dying of wounds. An officer, Captain R. Craig, in medical charge of the 11th Northumberland Fusiliers, and nine men of the field ambulances were wounded.

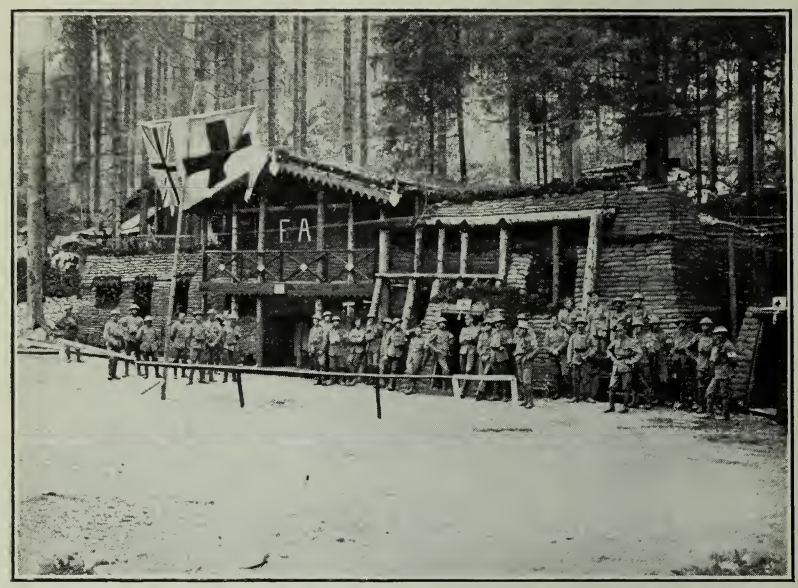
Amongst the wounded collected by No. 70 Field Ambulance there were 144 Austrian and 12 Italian wounded, 122 of the former and 7 of the latter being stretcher cases.

The *48th Division* A.D.M.S., Colonel Pickard, established right and left lines of evacuation from the regimental aid posts to a main dressing station at Casa di Sunio. On the

Main dressing station at Casa di Sunio.

right, wounded were brought back by hand from two regimental aid posts to an advanced dressing station at Boscon ; thence by motor ambulance cars to Casa di Sunio. On the left, the regimental aid posts were cleared to Cesuna either by hand or by Ford cars from Cavrari. At Cesuna they were transferred to the heavier cars and taken through Casa Magnaboschi to the main dressing station. When the enemy penetrated the line, the regimental aid posts in the centre were withdrawn, the more seriously wounded having to be left behind in the retirement, while the regimental aid posts on the right and left held their positions. The road from

the advanced dressing station at Boscon was destroyed at one place and a large artillery dump exploded, interrupting traffic for some three hours. The advanced dressing station consequently had to be kept clear by hand carriage, but no congestion occurred, reinforcements of bearers being sent up from time to time. The road was sufficiently repaired for cars to go up to Boscon advanced dressing station by 10 a.m. on the 16th June

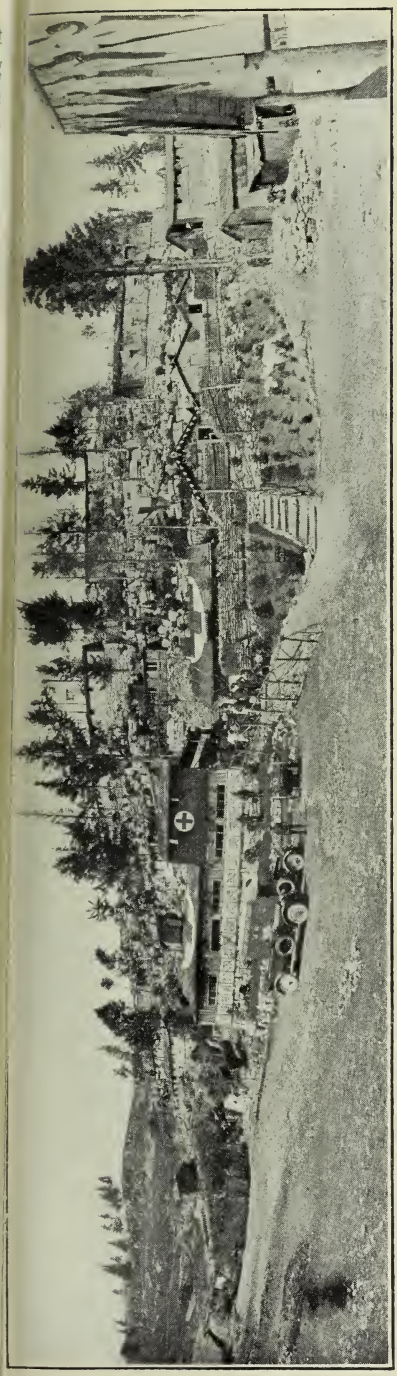


"Swiss Cottage." Advanced dressing station at Boscon, Asiago Front 1918.

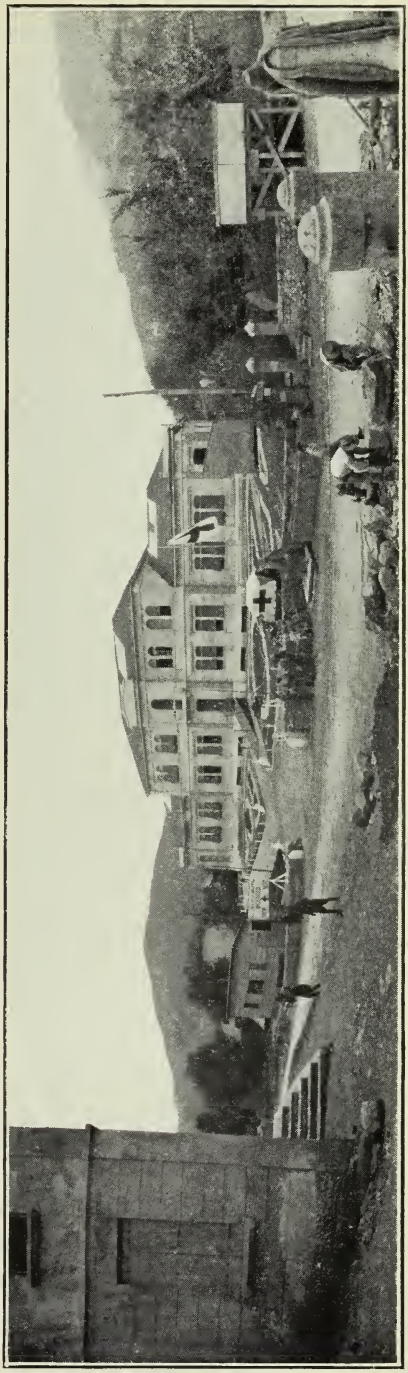
The division had to deal with a large number of sick, owing to the influenza epidemic. The empty returning lorries were used to evacuate them. On the second day many Austrian wounded had been left behind in the counter-attack. They were also sent back in lorries to the casualty clearing station.

The sketch maps of the front positions of the medical posts of the 48th Division show how they were affected by the penetration of the line by the enemy on the morning of 15th June.

The casualty clearing stations, as already noted, were at Montecchio-Precalcino (Nos. 24 and 39) and at Dueville (No. 9). No 36 M.A.C. was employed in clearing to them. Its headquarters were at Madonetta.



Advanced dressing station at Magnaboschi Asiago Front 1918.



Walking wounded collecting post at Calvene. Asiago Front 1918.

One of the field ambulances of the *7th Division* in reserve, No. 21, formed a walking wounded collecting station for the 23rd and 48th Divisions in school buildings at Calvene. The other field ambulances of the division were employed as a divisional rest station and hospital for sick, but a section of No. 22 was employed in an advanced operating centre at Cavaletto.

A convalescent camp for influenza cases was established by the 48th Division field ambulances at Tavola (Madonetta) and a scabies hospital and divisional rest station at Grumolo Pedemonte. The 23rd Division had a divisional rest station at Salcedo.

The Battle of Vittorio Veneto.

The Passage of the Piave.

(*23rd October to 4th November* 1918.)

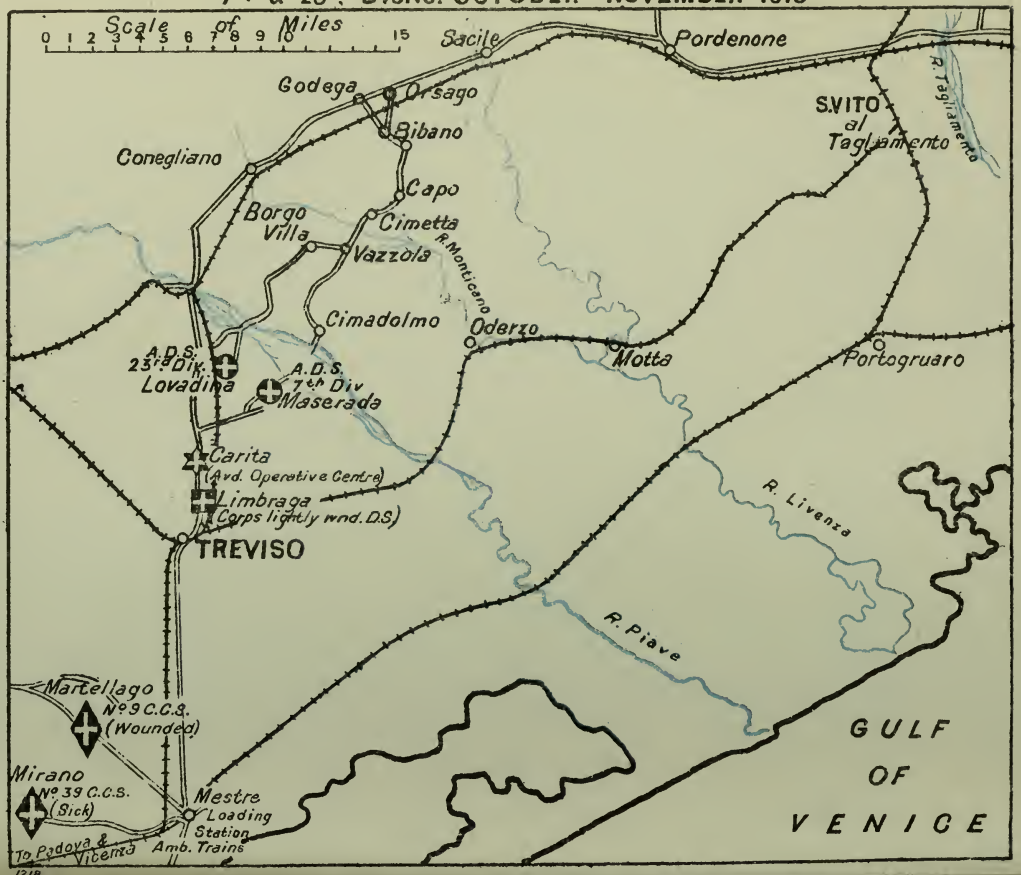
During the final operations on the Italian front the British divisions, as already noted, were engaged on two sectors; the 7th and 23rd Divisions in the Italian Tenth Army, under Lord Cavan, on the Piave, east of the Treviso-Conegliano railway; and the 48th Division on the Asiago front and in the Val d'Assa, to the north-west of Asiago.

The operations conducted by the former two divisions were the Passage of the Piave, and by the latter division the fighting in the Val d'Assa.

In the operations, which commenced on the Piave on the night of the 23rd/24th October and culminated in the armistice with Austria on the 4th November, the 7th Division was on the British right and the 23rd Division on its left, on the right bank of the river facing the island, Grave di Papadopoli.

The first phase of the attack was the capture of the island by a brigade of the 7th Division and a battalion of the 23rd Division on the night of the 23rd/24th October. The troops crossed over by boats and bridges to the Lido, or northern end of the island, captured the island and many prisoners, and then withdrew to their original positions, leaving a holding party on the island. The main attack was to take place on the following night, but it rained heavily during the 24th and the river rose. The operations were consequently postponed till the morning of the 27th October. Both divisions crossed to the left bank that day and advanced between then and the 1st November to the Monticano and Livenza rivers. The 23rd Division then remained in the area around Sacile on the

MEDICAL SITUATION ON THE PIAVE FRONT PREVIOUS TO THE ADVANCE OF THE 7TH & 23RD DVSNS. OCTOBER – NOVEMBER 1918



Livenza, while the 7th Division advanced to the Tagliamento, an Italian division having taken its place on the right of the 23rd Division.

The Medical Services during the Passage of the Piave.

At the commencement of the battle the 7th Division had an advanced dressing station at Maserada and the 23rd at Lovadina. A corps lightly wounded dressing station was

Ward in an advanced operating centre in Italy.

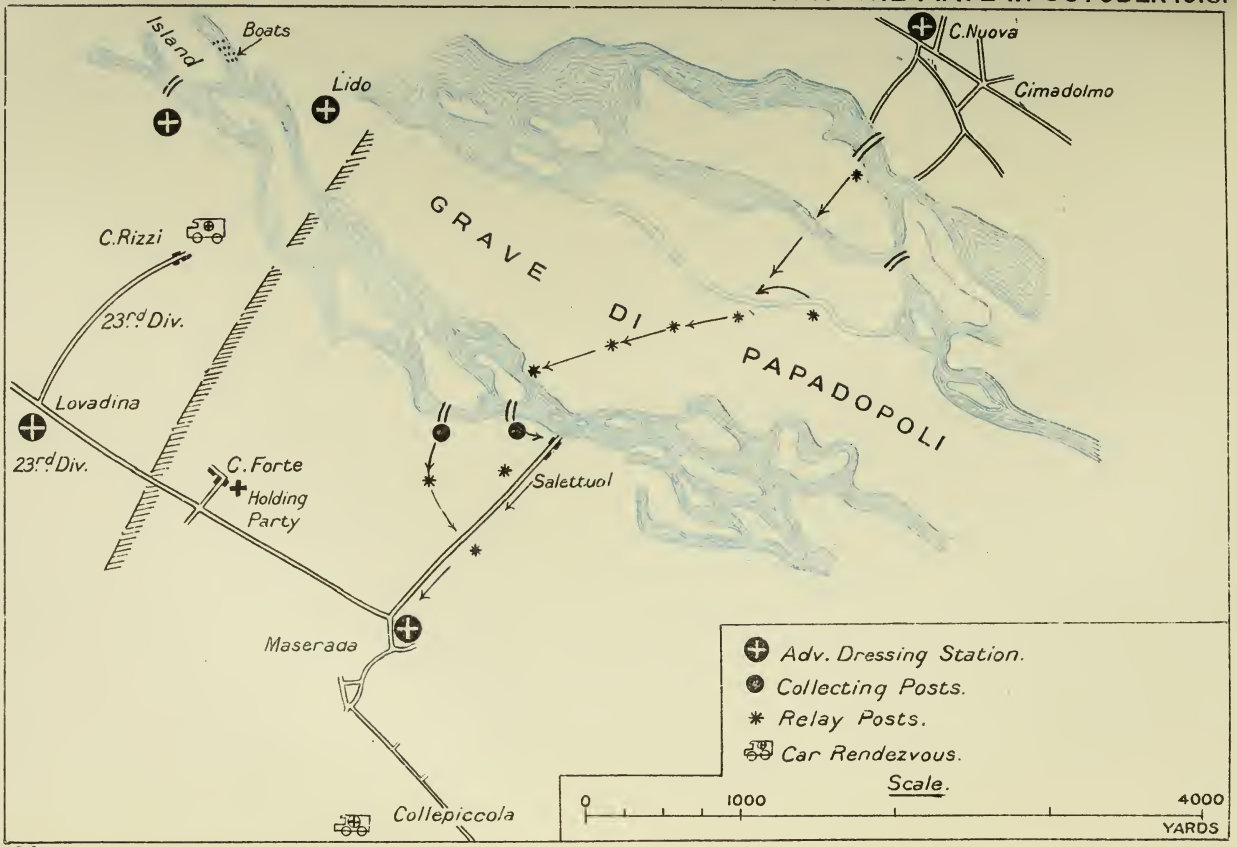
opened at Limbraga, on the main road north of Treviso, and an advanced operating centre, with teams from Nos. 9 and 39 C.C Ss., somewhat further forward at Carita, on the same road No. 9 C.C.S. was opened at Martellago for wounded only and No. 39 C.C.S. for influenza patients and other sick. Field ambulance motor cars evacuated casualties to the advanced operating centre and lightly wounded dressing station, and No. 36 M.A.C. cleared these to the casualty clearing station. No. 36 Advanced Depôt of Medical Stores was then at Thiene. Dumps of stretchers and blankets were kept at Limbraga, and also at the advanced dressing station.

The field ambulances of both the 7th and 23rd Divisions had been divided into "A" and "B" échelons. Their transport had been reorganized for work in the mountains on the Asiago front, as already noted, and had pack transport, G.S. and light (cavalry pattern) horsed ambulance wagons added to it. "A" échelon was consequently formed of the bearer divisions with one tent sub-division each and the light transport; "B" échelon of the remainder of the units and the heavy transport.

Operating theatre at an advanced operating centre in Italy.

During the initial operation by the 7th Division on the night of the 23rd/24th October, a small detachment of "A" échelon of No. 22 Field Ambulance, consisting of a bearer sub-division and two medical officers, each bearer taking with him a stretcher, a blanket and a quantity of surgical dressings, crossed to the island in boats with the brigade. The crossing was difficult owing to the darkness. The boats held only seven men each and the current was strong. The casualties were few and were successfully got back to the mainland in the empty boats. They were transferred in ambulance cars to the 23rd Division advanced dressing station at Lovadina. In spite of the heavy shelling there were no casualties during the

MEDICAL SITUATION OF THE 7TH DIVISION AT THE PASSAGE OF THE PIAVE IN OCTOBER 1918.



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transit. The detachment left on the island was in danger of being cut off from supplies when the river rose in flood the next day, but extra rations and medical supplies, stretchers and blankets were got across.

During the main operations, collecting posts were formed by both divisions on the left bank of the Piave, and the advanced dressing stations followed in échelons the advance of the brigades. None of the wheeled transport, however, could be got across until later, when only the light horsed ambulance wagons and Ford ambulance cars arrived on the left bank. They were not, however, permitted to return loaded across the river. Consequently for a time the evacuation of wounded had to be carried on by relays of stretcher bearers with the aid of wheeled stretcher carriers. Both divisions had reinforced the number of stretcher bearers by 150 men from the infantry and divisional employment companies, and twenty mule leaders were attached to each field ambulance for the pack transport.

For the first three days after crossing the Piave it was found extremely difficult to maintain an adequate supply of stretchers and blankets. The position was relieved when the Ford motor ambulance cars crossed the river, but there was no other source of supply until Sacile was reached. Then a large quantity of dressings was found there in the hospitals abandoned by the Austrians.*

As the Italian division moved into the area of the 7th Division, orders were given to the A.D.M.S. of the latter on the morning of the 28th October to take its wounded into his advanced dressing stations. They were to be evacuated from there in Italian ambulance cars, but, as only three cars arrived, most of the evacuation of Italian wounded to their own hospitals was carried out by the British ambulance cars. A large number of Austrian wounded was also collected and evacuated.

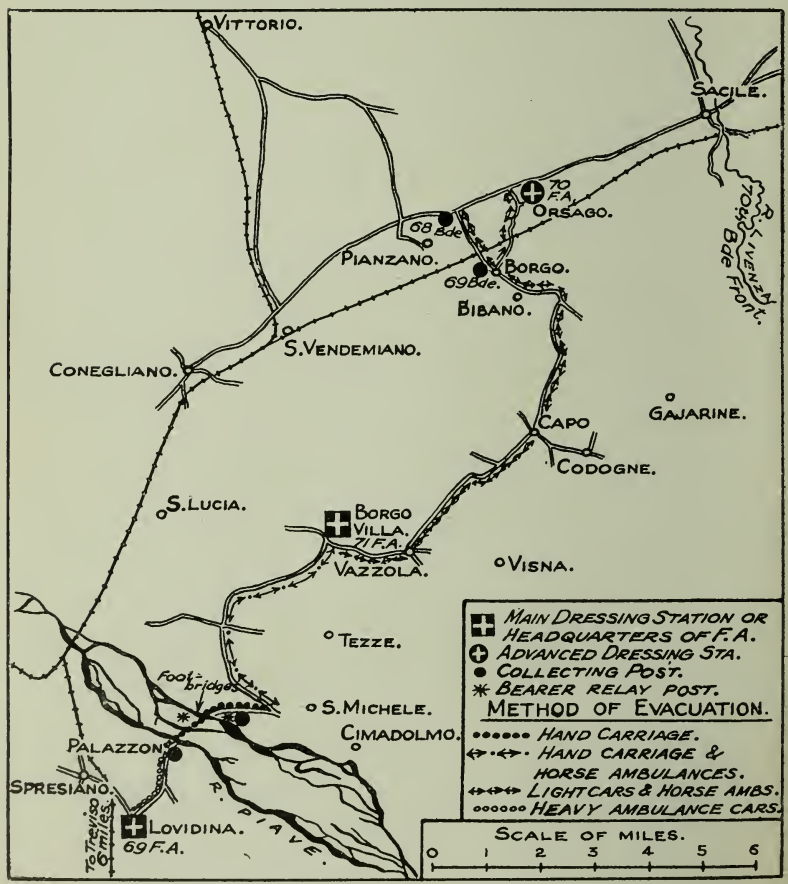
The steadily increasing distance from the river bank made evacuation by wheeled traffic more and more urgent The light horsed ambulance wagons came over first, and relieved the situation to some extent ; but it was only when the motor ambulance cars reached the left bank of the river that material assistance was obtained. Fortunately the casualties were not excessive, and Austrian prisoners assisted in the work of carrying them back. The assistance of the Austrian prisoners,

* No. 36 Advanced Depôt of Medical Stores had not arrived at Treviso until the 30th October, and motor ambulance cars had to be sent back to Thiene and Vicenza to obtain supplies, thus using up ambulance transport required for evacuating wounded to the casualty clearing stations near Mestre.

however, led to difficulty in obtaining stretchers, as the prisoners did not return, and the stretchers taken back by them did not again come up, at any rate immediately.

Large numbers of bearers had to be kept constantly on duty carrying wounded across the river by hand. In carrying from the left bank to the island the bearers had to wade at times waist deep. The general system of evacuation from the collecting posts in the most advanced situations to the advanced dressing station at Lovadina on the right bank of the Piave is well illustrated by the sketch map taken from the diary of Colonel W. G. Wright, the A.D.M.S. of the 23rd Division, and the system of hand carriage across the Piave to the advanced dressing station at Maserada by a similar sketch map from the diary of the A.D.M S. of the 7th Division, Colonel S. A. Archer.

MEDICAL SITUATION OF THE 23RD DIVISION DURING THE FINAL OPERATIONS ON THE PIAVE, OCT. 1918.



Until Sacile was occupied by medical units there were no suitable means of retaining wounded in the area east of the Piave, and all had to be transferred to the area west of the river, but by the 31st October a main dressing station and advanced operating centre were opened at Borgo Villa, where there had been an Austrian medical post with ample accommodation, by No. 71 Field Ambulance and No. 9 C.C.S., and on the 2nd November an advanced operating centre of No. 39 C.C.S. was moved into the Austrian hospital in the elementary school at Sacile.*

At the time of the armistice the D.M.S. had arranged with the D.D.M.S., XIVth Corps to assume responsibility for the evacuation of casualties from the left bank of the Piave, and 100 Austrian prisoners, under the direction of two officers and several N.C.Os. of the R.A.M.C., were employed in this duty. The casualties could only be evacuated from the left to the right bank by hand carriage throughout the operations, and this, as already shown, was effected by relays of bearers. The distance across the river by the Salettuol Bridge was two miles. An advanced section of No. 9 C.C.S. was at Lovadina on the 4th November, and the evacuation across the river was placed under the direction of its commanding officer. The ambulance cars were not allowed to return across the pontoon bridges till the 6th November. The relays of bearers were then withdrawn.

The situation, therefore, at the time of the armistice showed the field ambulances of the 7th Division in the Tagliamento area, those of the 23rd Division in the Livenza area, advanced sections of No. 39 C.C.S. at Sacile and of No. 9 C.C.S. at Lovadina, with advanced operating centres at Sacile, Borgo Villa and Carita, and their headquarters still far back in the vicinity of Mestre. Evacuation to the base was taking place by ambulance train from Mestre. No. 36 Advanced Depôt of Medical Stores was at Treviso, and No. 36 M.A.C. was engaged in evacuating casualties from the right bank of the Piave to the casualty clearing stations and ambulance trains.

On the 9th November the British divisions commenced to withdraw to the areas around Vicenza.

* There were three Austrian hospitals in Sacile. They had been left intact. In one, the civil hospital, there were many cases of typhoid fever and influenza. The elementary school had been used as an operating centre. Only unburied dead had been left in it. In the third there were a number of Austrian and one British wounded and influenza cases, under the charge of an Austrian medical officer and two sisters. None of the hospitals, however, had food or comforts, and the rest of the staffs of all had been withdrawn.

The total number of casualties admitted to the medical units of the XIVth Corps between the 26th October and 1st November was 2,518, distributed as shown in the following table :—

Formations.	Advanced Operating Centres.			Lightly Wounded Dressing Stations.			Grand Total.
	Offs.	O.R.	Total.	Offs.	O.R.	Total.	
7th Division	6	111	117	5	392	397	514
23rd Division	6	122	128	20	607	627	755
Other formations ..	2	4	6	7	9	16	22
Italians	1	45	46	—	608	608	654
Austrians	13	89	102	13	458	471	573
Totals	28	371	399	45	2,074	2,119	2,518

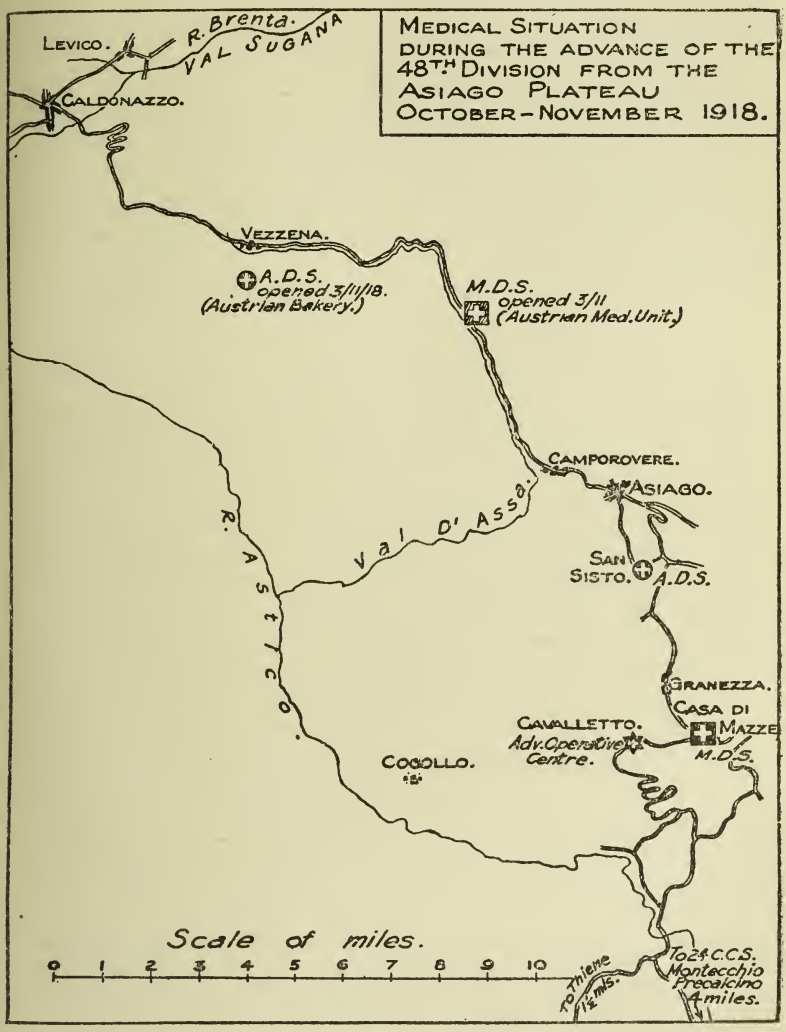
The Fighting in the Val d'Assa.
(*29th October to 4th November* 1918.)

The operations in which the 48th Division was engaged while the 7th and 23rd Divisions were thus advancing across the Piave to the Tagliamento commenced in the Asiago area with a bombardment of the enemy trenches and a raid by a battalion in the early morning of the 29th October. The trenches were found empty, the enemy apparently having withdrawn to the north of Asiago. The divisional front then advanced to Camporovere, and attacked the hills north of Asiago on the east of the Val d'Assa, on the morning of the 1st November. The enemy retired during the night of 1st/2nd November to the Val d'Assa, and an advance along the Val d'Assa was ordered, with advanced guards occupying the hills on either side. On the morning of the 3rd November an enemy corps headquarters and portions of two divisions were surrounded near Vezzena in the valley and over 7,000 prisoners taken. The 48th Division then occupied the towns of Caldonazzo and Levico in the Val Sugana (on the Brenta river), and the armistice was signed the following day. The division was withdrawn to the plains on the 10th November.

The general arrangements for the medical services were similar to those during the fighting on the Asiago front in June 1918. The wounded were few, but there were many sick.

No. 24 C.C.S. remained at Montecchio-Precalcino in the plains, and had a detachment forming an advanced operating centre at Cavalletto on the plateau. An advanced dressing station was at San Sisto and the main dressing station at

Mazze, to which it had been withdrawn from Granezza after the operations in June. The regimental aid posts remained along the line Camporovere to Asiago until the 2nd November. When the division advanced along the Val d'Assa on that



day, an advanced dressing station was opened by the 1/2nd South Midland Field Ambulance in an admirably equipped Austrian medical unit in the valley, and another post was opened by the 1/3rd South Midland Field Ambulance at Asiago.

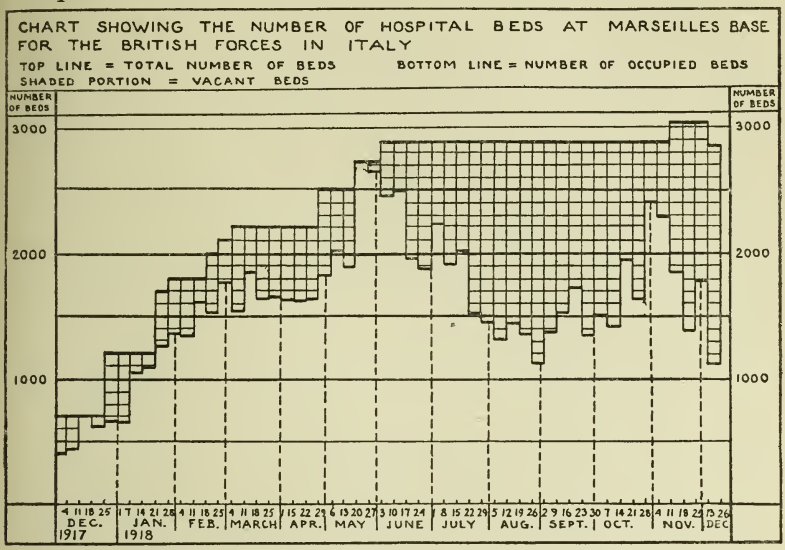
On the 3rd November the main dressing station was moved up to the position of the advanced dressing station in the valley, and the advanced dressing station moved forward to an Austrian bakery near Vezzena. When the armistice was signed the A.D.M.S. of the division went on to Caldonazzo and took over an Austrian hospital, which had accommodation for about 150 on beds or mattresses in two large buildings. The 1/2nd South Midland Field Ambulance was then ordered up to it. Afterwards sick and wounded were collected to Caldonazzo. They were all cleared to No. 24 C.C.S. at Montecchio-Precalcino by the 14th November. On the 16th November the A.D.M.S. of the 48th Division was sent to Innsbrück in search of British sick and wounded prisoners of war. He returned on the 23rd November with twelve.

The Lines of Communication.

The organization of the lines of communication from the British front in Italy to the base hospitals at Genoa and Bordighera, and thence to the Marseilles base in France, has already been described. No material changes were made during the time the British forces were in Italy. But before the organization had been built up and the hospital units from France and Salonika arrived, the officer commanding No. 79 General Hospital at Taranto was directed to send the equipment for 500 beds with such personnel as could be spared to Arquata. A hospital for 200 beds was rapidly organized there in a disused wine factory with this equipment and was known as the Station Hospital, Arquata, until it was taken over as " B " section of No. 51 Stationary Hospital. Officers and men of the R.A.M.C. who had been attached to the groups of artillery were at the same time employed in forming medical and sanitary posts along the route by which the troops were arriving in Italy. At Ventimiglia, for example, they established a small detention hospital, and at Savona a large *halte repas*.

A consulting surgeon, Colonel T. Crisp English, and a consulting physician, Colonel H. H. Tooth, were appointed for duty on the lines of communication and took up their headquarters at Genoa. The former left in June and the latter in October 1918. Colonel English was not replaced, but Colonel G. R. Murray replaced Colonel Tooth. On the D.M.S. staff there were also a consulting surgeon, Colonel Gordon Watson, who came with the staff of the Second Army from France, and a consulting physician, Lieut.-Colonel Gates.

The hospital accommodation at Marseilles and number of beds occupied at the end of each month are shown on the chart.



Accommodation at the base in Italy was organized on the same lines as in France, that is to say, expansion in emergency was provided for by crisis accommodation, and beds were set apart for special diseases, and for officers, nursing sisters and labour units, as shown on the next page.

General service V.A.D. women were employed in the hospitals after August 1918. Before then authority was obtained for the employment of Italian women. Women drivers from England were employed at the base for motor ambulance cars. Hostels were opened for nursing sisters at Taranto, Rome, Turin and Genoa, more especially for nursing sisters passing to and from Salonika. A convalescent home was also established for them at first in Turin, but towards the end of 1918 in a villa at San Remo. The convalescent home at Turin was then appropriated for general service members of the V.A.D.

In July 1918 the Kulm Hotel at Portofino, near Genoa, was acquired as a convalescent home for officers. It had accommodation for sixty-eight. Previous to this an American citizen, Mr. Hagemeyer, offered accommodation for four officers in his house at Florence. It was used mainly by officers who had been left sick at Faenza on their way to or from Taranto.

Number of Beds in Hospitals on Lines of Communication, Italian Expeditionary Force, August 1918.

Unit.	A.—Beds for Ordinary Sick and Wounded.		B.—Special Beds.					Total A and B.	Crisis Beds.
	Offs.	O.R.	Nursing Sisters.	Isolation & Infection.	Mental Cases.	Skin Cases.	V.D.		
No. 11 General Hospital, A Section ..	66	592	12	—	—	—	—	670	230
No. 11 ,, ,, B Section ..	14	327	—	70	13	45	51	520	250
No. 62 ,, ,, ...	100	1,468	25	44	8	16	548	2,209	409
No. 38 Stationary Hospital	—	520	—	—	—	—	—	520	150
No. 51 ,, ,, A Section ..	—	300	—	—	—	—	—	300	100
No. 51 ,, ,, B Section ..	14	194	1	5	1	3	2	220	180
No. 51 ,, ,, C Section ..	—	—	2	118	—	—	—	120	—
No. 29 ,, ,, A Section ..	—	512	12	—	—	13	13	550	20
No. 29 ,, ,, C Section ..	32	146	—	20	2	—	—	200	70
No. 29 ,, ,, B Section ..	—	86	10	—	—	—	—	96	—
	226	4,145	62	257	24	77	614	5,405	1,409
Military Hospital, Faenza	4	86	—	—	—	—	—	90	—
Native Hospital, Faenza	—	40	—	10	—	—	—	50	—
No. 79 General Hospital, Taranto ..	60	712	—	200	—	24	44	1,040	—
No. 6 Native Labour Hospital, Taranto	—	170	—	60	—	28	42	300	—
	64	1,008	—	270	—	52	86	1,480	—
Grand Total	290	5,153	62	527	24	129	700	6,885	1,409

The convalescent depôt for other ranks at Genoa has already been noted. It was on the sea front at the Lido.

In the establishment of all these units great assistance was obtained from the branch of the British Red Cross Society in Italy, under Lord Monson. Until No. 41 M.A.C. arrived, ambulance cars were supplied by the society for work at Bordighera, Cremona, Arquata and Tortona. It also formed depôts of stores at Genoa, Taranto, Padova and Vicenza, and erected a recreation hut at the men's convalescent depôt, in addition to other valuable assistance, such as the provision of personnel for detention hospitals and invalid kitchens.

The work of the sanitary services in Italy is described in the volumes on the Hygiene of the War. The most important duties falling on them were in connection with malaria, which was specially prevalent in Taranto, as also in the plains south of the front areas occupied by the British troops.

With regard to ambulance trains, owing to the time taken on the return journey from front to base and back, a matter of at least three days, it was felt that in the event of active operations the four trains attached to the British Expeditionary Force would not be sufficient. Consequently early in June 1918 provision was made for the preparation of four temporary ambulance trains. The equipment was collected at an ambulance train supply store at Voghera, and sent as required on empty ambulance trains to the forward area. A crew of one medical officer and nine other ranks was detailed for duty on each. They were brought into use during the final operations, and were formed of 1st and 2nd class Italian rolling stock with a kitchen coach added ; 750 to 850 sitting patients could be carried in each. In connexion with them rest stations and *haltes repas* were formed at Cremona and Voghera. They off-loaded at Genoa.

A further provision of temporary ambulance trains was made for carrying sitting patients between Genoa and Marseilles. The *haltes repas* at Savona and Ventimiglia were used by them, the journey to Marseilles taking twenty-four hours. No. 10 Italian Red Cross train was also employed in evacuating patients from Genoa and Bordighera to Marseilles, running three days in each week. One of the Italian Maltese Order trains was also lent on one occasion to bring patients from Mestre to Bordighera. The loading stations in the forward area were at Mestre for the Piave front and Cavazzale for the Asiago front.

The arrangements made for evacuating from the Italian base hospitals to Marseilles met all requirements, although at one time, in May, the A.D.M.S. of the Italian Base expressed anxiety regarding the small number of vacant beds reported from Marseilles. Sick and wounded in the Marseilles hospitals, however, could always be cleared when necessary to the northern bases in France, and there was no real cause for anxiety. The state of vacant beds in Italy and Marseilles and the number awaiting evacuation from the former is shown in the chart, from which it will be seen that when the number of vacant beds in Marseilles in May was low the number in Italy was high. The only period of much congestion in both places was after the armistice, at a time when the urgency of evacuation was not so great.

The Health of the Troops.

The battle casualties, as will have been gathered, were comparatively few, and, consequently, the greater part of the work of the medical services, apart from sanitation, was connected with sickness. The weekly wastage from sickness, however, was never excessive until October and November 1918, when it increased to an alarming extent on account of the epidemic of influenza. An outbreak of this disease had already occurred in May and was continued in June, but appeared to have abated in July. At first it was thought to be sand-fly fever, and Lieut.-Colonel P. J. Marett, R.A.M.C., an expert in this disease, was ordered from France by the War Office to investigate it. A convalescent camp was established for the patients at Grumolo by a field ambulance of the 48th Division. Lieut-Colonel Marett reported that the disease was not sand-fly fever, although no very clear indication of its nature was elicited at the time.

When it recurred in October it was definitely of the nature of influenza, and this disease was the cause of most of the admissions to casualty clearing stations during the time the British were in Italy. During the thirteen months ending December 1918, 10,590 cases had been admitted. The admissions for no other disease approached this figure; inflammation of the connective tissue and diarrhoea, which was specially prevalent in August, only giving 3,727 and 3,485 admissions respectively, and pyrexia of uncertain origin 2,754. The admissions for venereal disease during the period were 1,490. and no other disease reached the 1,000 figure. Admissions for frost bite and trench foot were negligible, 26 in all.

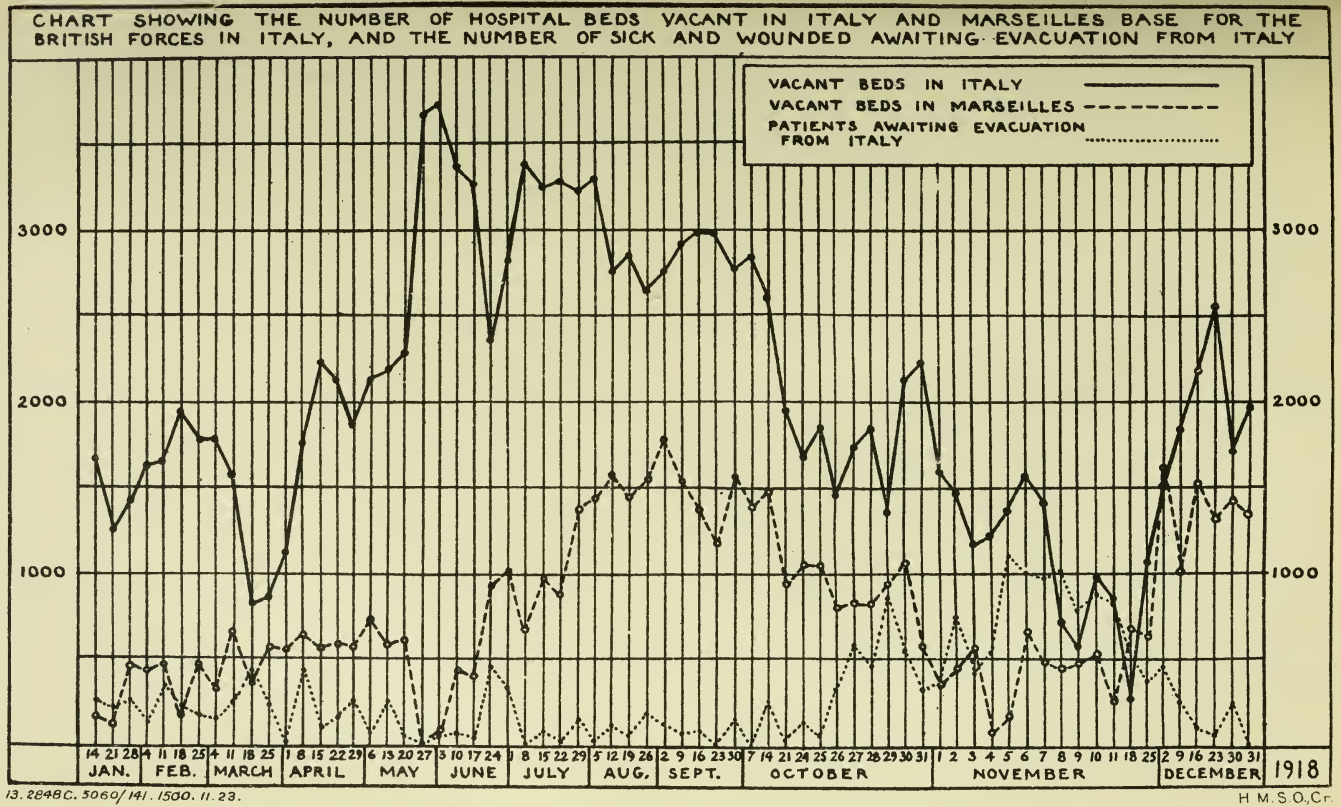


CHART SHOWING THE NUMBER OF HOSPITAL BEDS VACANT IN ITALY AND MARSEILLES BASE FOR THE BRITISH FORCES IN ITALY, AND THE NUMBER OF SICK AND WOUNDED AWAITING EVACUATION FROM ITALY
VACANT BEDS IN ITALY
VACANT BEDS IN MARSEILLES
PATIENTS AWAITING EVACUATION FROM ITALY
3000
2000
1000
14 21 28 4 11 18 25 4 11 18 25 1 8 15 22 29 6 13 20 27 3 10 17 24 1 8 15 22 29 5 12 19 26 2 9 16 23 30 7 14 21 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 18 25 2 9 16 23 30 31
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCTOBER NOVEMBER DECEMBER
1918

13.2848C. 5060/141. 1500. 11. 23.

H.M.S.O.,Cr.

The British troops were fairly free from the typhoid group of fevers in Italy, although it was prevalent in the civil population and the Italian army in August, September and October. During the year December 1917 to November 1918 there were thirty cases of typhoid and one hundred and twenty paratyphoid and other fevers of the enteric group amongst the British. Fully one-third of these cases occurred early in the year, when the number of men inoculated against typhoid was comparatively small. A conference of Italian, French and British military and Italian civil medical authorities met in Padua in January 1918, at the instigation of the British D.M.S. to consider the most suitable measures for combating the spread of infection, and for organizing co-operation between the Italian civil authorities and those of the Allied forces in improving the general sanitation of the occupied areas. The incidence of typhoid fever amongst the civil population in the autumn of 1918 was almost half that in the autumn of 1917, apparently in consequence of the measures agreed upon at this conference.

There was little else of special significance in connexion with the medical services of the British Force in Italy.

CHAPTER XIX.

THE MEDICAL SERVICES IN EGYPT.

DURING the war Egypt was not only organized for internal defence but also became the base for the military operations on its own frontiers and in the Dardanelles, Macedonia and Palestine. It was also an intermediate base for troops passing to and from the other theatres of war in Asia, East Africa and Western Europe. Its eastern frontier ran from Rafa to Akaba, and included the Sinai Peninsula. Its western frontier ran from an outpost at Sollum, on the Mediterranean littoral, southwards to the Sudan, and included the oases of Siwa, Baharia, Farafra, Dakhla and Kharga in the great Libyan desert which lies between Egypt and Tripoli. On the south was the Sudan, under a British administration, with its headquarters at Khartum, where were also the headquarters of the Egyptian Army.

The British garrison previous to the war consisted of a regiment of cavalry, a battery of artillery, an Indian mountain battery, five battalions of infantry and companies or detachments of R.E., A.S.C., R.A.M.C., A.O.C., and A.V.C., under the command of Major-General the Hon. J. H. C. Byng. Its headquarters were in Cairo. The troops occupied the Kasr-el-Nil barracks there, cantonments in Abbassia, just outside and north-east of Cairo, and cantonments in Mustapha, on the sea north-east of Alexandria with detachments in Alexandria. There were also detachments of British troops in Khartum and in Cyprus. The Egyptian Army, under the Sirdar, General Sir Reginald Wingate, was distributed to various posts in Egypt, the Sudan and Sinai.

The medical services were administered by a D.D.M.S., Colonel N. Manders. The R.A.M.C. establishment was 20 officers, including 2 quartermasters, and No. 33 Company (about 116 other ranks) who were distributed to hospitals in Cairo, Alexandria, Khartum and Cyprus, and to reception hospitals or detention wards in the Kasr-el-Nil barracks and in the cantonments at Mustapha. The principal hospital was in the old palace of the Citadel, Cairo, equipped for 200 beds,

but capable of expansion by stores held in reserve to 543 or more. The other hospitals were for 100 beds at Ras-el-Tin, Alexandria, for 70 at Khartum, and for 16 beds in Polymedia and Troodos, in Cyprus, the former of these two places being occupied in winter and the latter in summer. At Abbassia there was a small hospital under a sub-assistant surgeon of the I.S.M.D. for the Indian establishment of the mountain battery. A Soldiers' Families Hospital was in the Citadel. Seventeen members of the Q.A.I.M.N.S. were in the Command, distributed to the hospitals in Cairo, Alexandria and Khartum.

The Egyptian Army had two modern hospitals of 200 beds each, one at Abbassia and the other at Khartum. They were under the administration of a principal medical officer, Lieut.-Colonel H. A. Bray, R.A.M.C.

There was a large command depôt of medical stores in the Citadel, Cairo.

After war was declared the British units were practically all withdrawn to help in the formation in the United Kingdom of the 27th and 28th Divisions. They were replaced by the 42nd (East Lancashire) Division of the Territorial Force, and Lieut.-General Sir J. Maxwell then replaced Major-General Byng as Commander-in-Chief of the forces in Egypt.

Until it was decided, in March 1915, to send an expeditionary force to the Dardanelles, the chief military concern was the organization of the defence of the Suez Canal. The Turks had entered the Sinai Peninsula and were threatening an attack on the Canal. As a temporary measure a brigade of the Lahore Division on its way from India to France landed in Egypt on the 9th November 1914, and remained there till the 19th when it was relieved by an expeditionary force from India under Major-General A. Wilson, who arrived on the 16th November. The Indian units were then formed into two new divisions, the 10th and 11th Indian Divisions, and the Canal defences were organized in three sections, No. 1 with headquarters at Suez, No. 2 with headquarters at Ismailia Ferry, and No. 3 with headquarters at Kantara. Major-General Wilson's headquarters were at Ismailia, his advanced base at Zagazig, and base at Cairo.

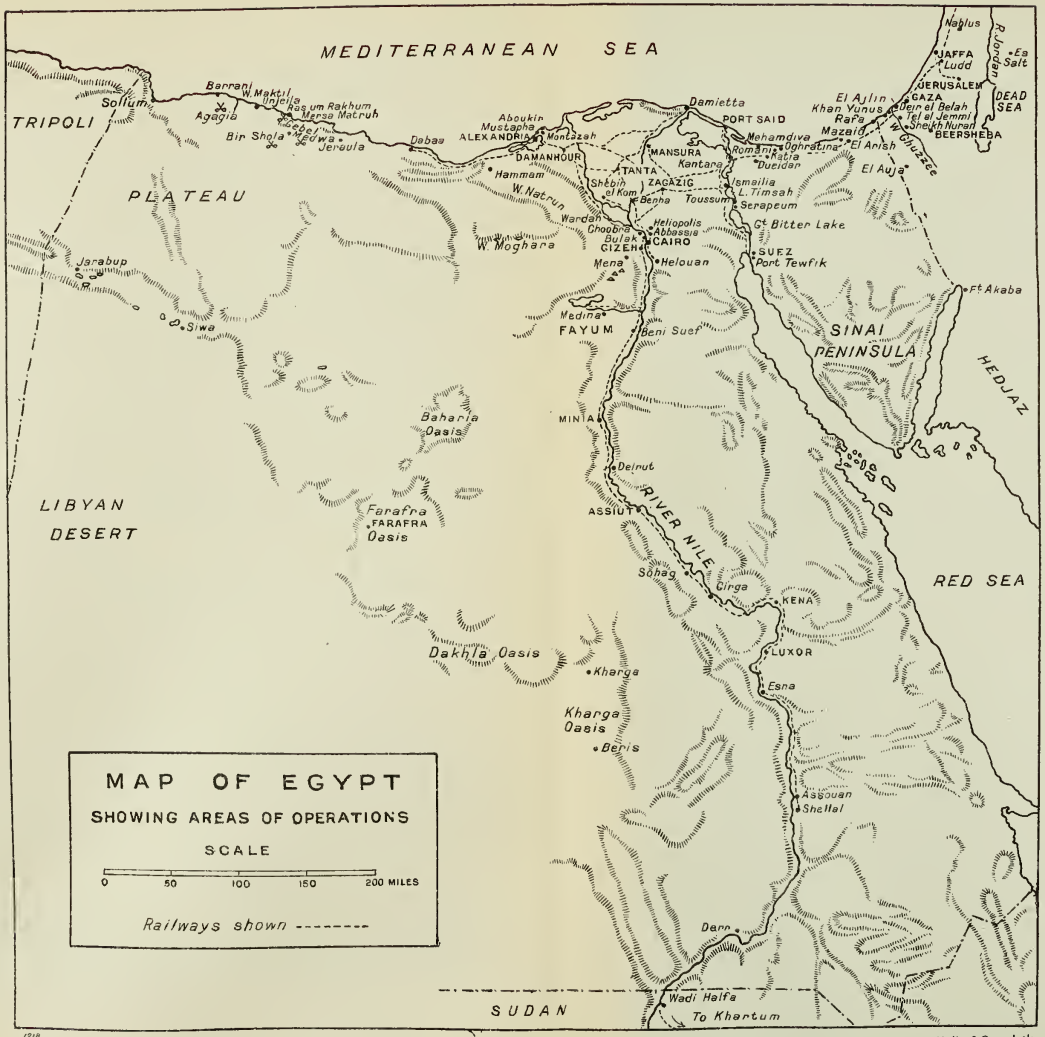
In the meantime the 1st Australian Division and the Composite Australian and New Zealand Division arrived in Egypt, the former early in December 1914, and the latter early in January 1915. They were encamped respectively at Mena, some five miles south-west, and at Heliopolis, some five miles north-east, of Cairo.

When the Expeditionary Force for the Dardanelles was formed a base was established for it in the area between Alexandria and Aboukir. It became eventually, in December 1915, the Levant Base under Major-General Altham. It formed part of the Mediterranean Expeditionary Force Command, which was independent of the Egyptian Command, thus creating a dual control in Egypt. The two divisions from Australia and New Zealand were transferred to this base, previous to embarkation for the Dardanelles, where they formed the Anzac Corps. Other divisions from England, the 63rd (R.N.) and the 29th, also occupied camps there for a short time in March and April, and the 52nd (Lowland) Division in June 1915, previous to embarking for the Dardanelles. In November 1915 the 28th Division from France was also temporarily encamped there previous to going to Salonika. The Levant Base also became a large Base Depôt for reinforcements and supplies to the Mediterranean Expeditionary Force. It ceased to exist in March 1916.

The military operations in Egypt, until the beginning of 1916, were confined to patrol work and repelling raids by the enemy on the Canal, and to extensive operations on the western frontier of Egypt. Most of the raids on the Canal were of a minor character, but on the 3rd February a determined attempt was made to cross the Canal at Toussum south of Ismailia, between the Great Bitter Lake and Lake Timsah, and at other points. Enemy camps within striking distance of the Canal were attacked by mobile columns from Egypt, especially on the 23rd March and 28th and 29th April.

Various Yeomanry units from the United Kingdom, mounted troops from Australia and New Zealand, the Bikanir Camel Corps, and an Imperial Service Cavalry Brigade from India came to Egypt during this early period.

On the western frontier the followers of the Senussi commenced to threaten the Nile delta from the western desert and extensive military operations had to be undertaken to safeguard the Nile valley and delta from attacks from the west between November 1915 and April 1916. On the 5th and 7th November 1915, the crews of a British naval ship and transport which had been torpedoed landed on the coast of Cyrenaica, and were held prisoners by the followers of the Senussi, who then attacked the frontier post at Sollum. The post was withdrawn to Mersa Matruh, halfway between Alexandria and Sollum, and a force, the Western Frontier Force, concentrated there under Major-General M. G. Wallace.


MEDITERRANEAN SEA
TRIPOLI
Sollum
Barrani
W. Maktil
Unjeila
Ras um Rakhum
Mersa Matruh
Agagia
Bir Shola
Sidi Barrani
Sidi Azeiwa
Jerabula
Dabaa
PLATEAU
Abuukir
Mustapha
ALEXANDRIA
Montazah
Damietta
PORT SAID
DAMANHOUR
Hammam
W. Natrun
TANTA
Shibin el Kom
ZAGAZIG
Benha
MANSURA
Kantara
Mehamdiya
Oghratina
Duweidar
Ismailia
L. Timsah
Toussum
Serapeum
Gt Bitter Lake
SUEZ
Port Tewfik
El Arish
El Auja
Nablus
JAFFA
Ludd
JERUSALEM
GAZA
Deir el Belah
Tel el Jemmi
Sheikh Nuneil
BEERSHEBA
DEAD SEA
El Ajlin
Khan Yunus
Rafa
Mazaig
Wadi Ghuzzee
Es Salt
R. Jordan
Ft Akaba
Wardan
Choobra
Bulak
CAIRO
GIZEH
Heliopolis
Abbassia
Helouan
W. Moghara
Mena
Janabup
Siwa
Medina
FAYUM
Beni Suef
SINAI PENINSULA
HEDJAZ
Baharia Oasis
MINIA
Deirut
ASSIUT
RIVER NILE
LIBYAN DESERT
Farafra
FARAFRA Oasis
Sohag
Girga
KENA
RED SEA
Dakhla Oasis
Kharga
LUXOR
Esna
Kharga Oasis
Beris
Assouan
Shellal
Dara
SUDAN
Wadi Halfa
To Khartum
MAP OF EGYPT
SHOWING AREAS OF OPERATIONS
SCALE
0 50 100 150 200 MILES
Railways shown --------
7218.
Malby & Sons, Lith

At the same time a Southern Force, under Major-General Sir John Adye, was engaged in defensive operations against threatened attacks from the Baharia oasis. The Dakhla and Kharga oases were at that time occupied by the enemy and Sir John Adye's force was employed on patrol duty from Fayum to Assiut and Esna on the Nile.

The campaign against the followers of the Senussi came to an end in March 1916, and the Southern and Western Frontier Forces were then combined in one command as the Western Force. Minor operations continued to be conducted by it for re-establishing Egyptian rule in the oases and protecting the western frontier. The Kharga oasis was re-occupied on 15th April and a garrison of 1,660 established there. The Moghara oasis was fortified on 27th April, raids were made from Sollum to destroy enemy ammunition dumps on the 7th, 11th, 23rd and 30th April. The construction of railways towards Baharia and Kharga was undertaken, and block-houses and patrols on camels and in motor-cars were maintained to prevent access to the Nile valley and delta. A thousand miles of front had thus to be watched on the west. The Baharia and Dakhla oases were occupied in October 1916 and Farafra in November, permanent garrisons being placed in them. Siwa oasis was entered from Matruh by armoured cars on 5th February 1917 with slight opposition.

While these events were taking place, operations were conducted from the Sudan against the Sultan of Darfur. A mobile column of some 3,000 in strength, under Lieut.-Colonel P. V. Kelly, was assembled in March 1916, and during the following two months traversed a waterless desert for 300 miles west of the railhead at El Obeid. Mechanical and camel transport was employed on sections of the advance. On May 22nd, a battle was fought at Beringia near El Fasher with the loss of 5 other ranks killed or died of wounds, and 3 officers and 18 other ranks wounded. El Fasher was occupied on the following day. The operations then ceased, but, although not marked by any outstanding incident, this short campaign was remarkable for the manner in which the difficulties of moving columns for so many miles in the desert were overcome.

When the expeditionary force was withdrawn from the Dardanelles to Egypt at the end of 1915 and beginning of 1916 and reorganized there as the Egyptian Expeditionary Force, a command, independent of the command of the forces in Egypt, was established for the defence of the Suez Canal

and the protection of Egypt from attacks by the Turks. Sir A. Murray, who took over this command from Sir C. Monro on the 9th January 1916, had under him all the organized formations east of a line drawn about five miles west of and parallel to the Suez Canal, generally speaking the area of the Sharquia Province of Egypt. The first step was the reorganization and equipment of a mass of unabsorbed Australian and other reinforcements at the Levant Base, the organization of mechanical and other transport, and the formation of training centres with a view to an offensive defence. The G.H.Q. of the command was at Ismailia. A mobile force with riding and transport camels was formed for an advance from Kantara towards Katia and El Arish. The scheme of operations was to concentrate at Katia for an advance to positions east of it and construct a broad gauge railway and road for the advance; as also a pipe-line for supply of water from the Sweet Water Canal at Ismailia.

On the 19th March 1916, Sir J. Maxwell left Egypt. Sir A. Murray formally took over the whole command in Egypt and the dual control then ceased to exist. The staff was reorganized, the Levant Base abolished, a Delta District Command with headquarters at Cairo for L. of C. defences established, and the Western Force* for defence of the Nile formed in two sections, a Northern and Southern, the boundary between them being a line drawn from east to west through Deirut. G.H.Q. remained at Ismailia.

The Anzac Corps was transferred to France and a second Anzac Corps organized, under Lieut-General Sir A. Godley, of the 4th and 5th Australian Divisions.

During April 1916 reconnaissances were carried out by troops from the Suez Section (No. 1) and the Ismailia Section (No. 2) of the Canal Defences by detachments of the Australian Light Horse and Bikanir Camel Corps.

No. 3 Section (Kantara) became the base for the defensive advance into the Sinai Peninsula, the first objective being the Katia District, a water-bearing zone of about 15 miles extent. Katia was some 30 miles from Kantara. The railway line reached to within 7 miles of it by the 21st April 1916, and was then near enough for a general advance to be made. A Katia District Command under No. 3 Section of the Canal Defences had been formed about a fortnight earlier with an

* The command of this Force was taken over from Major-General Peyton by Major-General C. Dobell and in May 1916 by Sir Bryan Mahon, but shortly afterwards by Major-General A. G. Dallas.

advanced post at Oghratina, 5 miles east of Katia, held by a squadron of yeomanry. A mobile column, designated the Desert Column, was formed under Lieut-General Hon. Sir A. Lawrence, as the advanced guard of No. 3 Section of the Canal Defences, and subsequently of what was designated the Eastern Force under Lieut.-General Sir C. Dobell. The Eastern Force Command included all sections of the Canal Defences. It received the designation "Eastern Force" in October 1916.

On the 23rd April 1916, the positions were attacked by a large enemy force. The post at Oghratina was overwhelmed and destroyed. Katia was attacked and fell, and the British force retired to Dueidar, some 13 miles east of Kantara. The enemy attacked Dueidar but was repulsed. The British casualties in this affair were 2 officers and 18 other ranks killed, and 4 officers and 21 other ranks wounded, in addition to three and a half Yeomanry Squadrons and other details lost at Oghratina and Katia.

Beyond bombing and reconnaissance of enemy camps 20 to 30 miles east of Katia, and destruction of a water supply in rock cisterns 40 miles south-east of Ismailia, there were no active hostilities until the 4th August 1916. On that date the first important battle on the Eastern front was fought, and from then onwards the Desert Column and Eastern Force steadily advanced along the coast route of the Sinai Peninsula, and cleared it of the enemy by the occupation of Rafa on the 9th January 1917. Unsuccessful efforts were made for the capture of Gaza on 26th March and 17th to 19th April of that year. The attack on Gaza was to be resumed on the 20th April but, as the losses likely to be involved could not be justified, further operations were abandoned and a period of trench warfare ensued which lasted until the end of October 1917, the Eastern Force entrenching itself from Tel-el-Jemmi on the Wadi Ghuzzee to El Ajlin on the coast west of Gaza, with cavalry patrols working to the south and south-east.

The Eastern Force then came under the command of Lieut.-General Sir P. Chetwode, and the Desert Column under Major-General Sir H. G. Chauvel.

The Canal Zone was organized into a Southern and Northern Section, the latter being reorganized as the Palestine L. of C. from the Suez Canal to Khan Yunus in May 1917.

General Sir E. Allenby succeeded Sir A. Murray in command of the Egyptian Expeditionary Force on 28th June 1917, and from that time onwards to the end of the war the military

situation, so far as Egypt was concerned, was that of a base for the operations in Palestine. No active operations of any moment were carried on in Egyptian territory.

For the advance into Palestine the organization of the Eastern Force and Desert Column was changed into that of an Army of two Corps, the XXth and XXIst, of three divisions each, and a Desert Mounted Corps of three mounted divisions. Palestine was definitely invaded in September 1917 by this force. Gaza and Beersheba fell; the army rapidly advanced and held a line from Jaffa to the Jordan valley from the end of 1917 to September 1918, when a decisive battle was fought, leading to the occupation of Damascus and the territory north of it. During these operations alterations were made in the composition of the Mounted Corps and the XXth and XXIst Corps. The 3rd and 7th Indian Divisions, which had fought in France and subsequently in Mesopotamia, replaced British divisions in January and May 1918. A fourth mounted division was added to the Mounted Corps. Hostilities against the Turks eventually ceased with an armistice on the 30th October 1918.

Administration of the Medical Services.

The preceding sketch of the military situation in Egypt during the war and the operations for its defence will serve to indicate how complicated and difficult the administration of the medical services became. When the British garrison was withdrawn and replaced by the 42nd Territorial Division, Australian, New Zealand and Indian troops in 1914, the D.D.M.S., Colonel N. Manders, his D.A.D.M.S. for Sanitation, Major Bagshawe, and the senior medical officers at Cairo and Alexandria, Lieut.-Colonels Knaggs and Beach, of the original R.A.M.C. garrison remained.

The 42nd Division had its A.D.M.S., Colonel J. B. Mann,* with it, and the Indian troops a D.D.M.S., Colonel Robinson, I.M.S., while the Director-General of the Australian Army Medical Corps, Surg.-General Williams, accompanied the Australian contingent to Egypt. Consequent upon this multiplication of administrative medical interests, a D.M.S., Surg.-General R. Ford, was appointed to the staff of Sir John Maxwell. He arrived in Egypt towards the middle of December 1914. He organized an administrative medical staff for Alexandria,

* Colonel Mann was invalided in June 1915 and was succeeded by Colonel T. P. Jones, R.A.M.C.

Cairo, and the Canal Defences, Colonel Manders becoming A.D.M.S., Cairo, Colonel Beach, A.D.M.S., Alexandria, and Colonel Robinson D.D.M.S., of the Indian troops and Canal Defences, with the A.Ds.M.S. of the new Indian divisions manning the Canal sections under him. The A.Ds.M.S. of the Australian Division, Colonel Howse, and of the New Zealand and Australian Division, Colonel Wills, were under the direct administration of the Director-General Australian Medical Corps ; but Surg.-General Williams left shortly after his arrival for London and did not return till February 1915, and went back to Australia in the following April. He again passed through Egypt in June 1915, and took his office staff with him then to London. The D.M.S., Egypt, consequently appointed an Australian medical officer, Lieut.-Colonel Barrett, as an A.D.M.S. on his staff, to represent the Australian Medical Service.

When it was decided to send an Expeditionary Force to the Dardanelles, a form of dual medical control was evolved in Egypt. An A.D.M.S., Colonel Sexton, was appointed to administer the medical services of the docks and camps of the Dardanelles Expeditionary Force base at Alexandria and between that city and Aboukir. He was under the control of the D.M.S. of the Expeditionary Force, who was independent of the D.M.S., Egypt, although his duties were apt to conflict with and overlap those of the A.D.M.S., Alexandria.

Owing to the demand for co-ordination of medical administration, not only in Egypt and the Dardanelles, but also in Malta and Gibraltar, and subsequently in Macedonia, the Army Council appointed a Principal Director of Medical Services for the Mediterranean generally with headquarters in Egypt. Surg.-General W. Babtie, then D.M.S., India, was appointed and arrived in Egypt on 15th June 1915,* with Lieut.-Colonel T. A. Granger, who held a similar appointment on his staff in India, as his A.D.M.S. He then brought Lieut.-Colonel Stammers from Malta to act as his A.D.M.S. for Sanitation.

Surg.-General Babtie and his staff were not attached to the staff of any military commander, and had no permanent office until a month later, when one was established in Alexandria, and towards the end of 1915, in Cairo. The position of an administrative medical officer attached to no military

* He had already paid a visit of inspection of the Indian Expeditionary Force in Egypt, in February and March 1915.

command was anomalous, and led to a form of triple administration in Egypt, that of the P.D.M.S., of the D.M.S., and of the A.D.M.S., Mediterranean Expeditionary Force base as representing the D.M.S. of that Force. Surg.-General Babtie's functions may, however, best be described as those of inspection and co-ordination of the medical work of the various Mediterranean Commands and Expeditionary Forces on behalf of the Director-General of the Army Medical Service at the War Office. When he was appointed by the Army Council, the duties assigned to him were to assume command of the medical services of the Mediterranean Expeditionary Force, Egypt and Malta, and be responsible for their co-ordination in these three commands. He was made directly responsible to the Army Council for the general working of the medical services and to the Commanders-in-Chief for any advice or action taken in their commands. But his duties did not relieve the Ds.M.S. of the Commands of their responsibilities and administration. He was also to arrange for the reception of the sick and wounded from the Dardanelles in Egypt and Malta, and for an equitable distribution of personnel in the three commands; to tender advice with regard to sanitation and to co-operate with the Q.M.G.'s branch of the staff and the Naval Transport Officer for the working of hospital ships.*

For a considerable time the evacuation of sick and wounded to and from Egypt was in the hands of Surg.-General Sir J. Porter, formerly Director-General of the Royal Navy Medical Services, who had been appointed Principal Hospital Transport Officer in July 1915. His headquarters were at Mudros, but he was represented at Alexandria by Engineer-Captain Ter Veen, R.N. With both of these officers Surg.-General Babtie was in constant touch. This method of directing evacuation, however, did not prove satisfactory and came to an end at the beginning of December 1915, when the control of evacuation of sick and wounded to and from Egypt was taken over by the P.D.M.S. Surg.-General Babtie was recalled for duty at the War Office in March 1916, and the appointment of a P.D.M.S. Mediterranean was then abolished.

On the return of the Dardanelles Expeditionary Force to Egypt at the end of 1915 and beginning of 1916, the D.M.S. of the Force administered, independently of the D.M.S., Egypt, the area under the command of Sir A. Murray; but when the dual command ceased in March 1916 with the formation of the Egyptian Expeditionary Force, the D.M.S. of that

* See Final Report of the Dardanelles Commission, p. 155.

Force administered the whole of the medical services in Egypt and its frontiers. Dual medical control thus ceased also, but a number of subordinate administrative medical appointments were made then or had been made previously. There were thus an A.D.M.S. for the Western Frontier Force, an A.D.M.S. for the Southern Force, and a D.D.M.S. or A.D.M.S. for each of the three sections of the Canal Defences. An A.D.M.S. was also appointed for Egyptian hospitals, which were provided for the sick and wounded of the Egyptian Labour and Camel Transport Corps and Turkish Prisoners of War. On the departure of the Indian divisions from the Canal Defences, Colonel Robinson's appointment as D.D.M.S. of the Defences lapsed, but he remained in Egypt as D.D.M.S. for Indian troops and hospitals. On the abolition of the Levant Base, its A.D.M.S. became a D.D.M.S. for the L. of C. of the Egyptian Expeditionary Force.

On the formation of the Eastern Force and Desert Column for the advance in the Sinai Peninsula, a D.D.M.S. was appointed to each, the D.D.M.S. of the Desert Column being regarded as subordinate to the D.D.M.S. of the Eastern Force. The Canal Sections were then administered by D.A.Ds.M.S. under the D.D.M.S., Eastern Force, and the divisions of the Force and Desert Column by divisional A.Ds.M.S. The D.D.M.S., L. of C., was abolished. He became D.D.M.S. of the Eastern Force, while the D.D.M.S. of the 3rd Section of the Canal became D.D.M.S. of the Desert Column.

When these changes in organization took place, the Western Frontier Force and Southern Force were merged into one. The A.D.M.S. of the latter became the A.D.M.S., Western Force. This appointment was again merged into that of an A.D.M.S., Delta and Western Force, in February 1917, and eventually at the end of the year divided into two administrative appointments, that of A.D.M.S., Delta, for lower Egypt, and A.D.M.S., Egypt, for upper Egypt. The only appointment which remained unaltered throughout was that of A.D.M.S., Alexandria.

Finally, when the forces were reorganized by Sir E. Allenby into corps for the invasion of Palestine, a D.D.M.S. was appointed to each corps, under the D.M.S. of the Expeditionary Force; while the medical services on the Palestine L. of C. were placed under the administration of an A.D.M.S.

The staffs of the administrative medical officers consisted of Assistant or Deputy Assistant Directors of Medical Services for general and sanitary duties. But in addition to these there

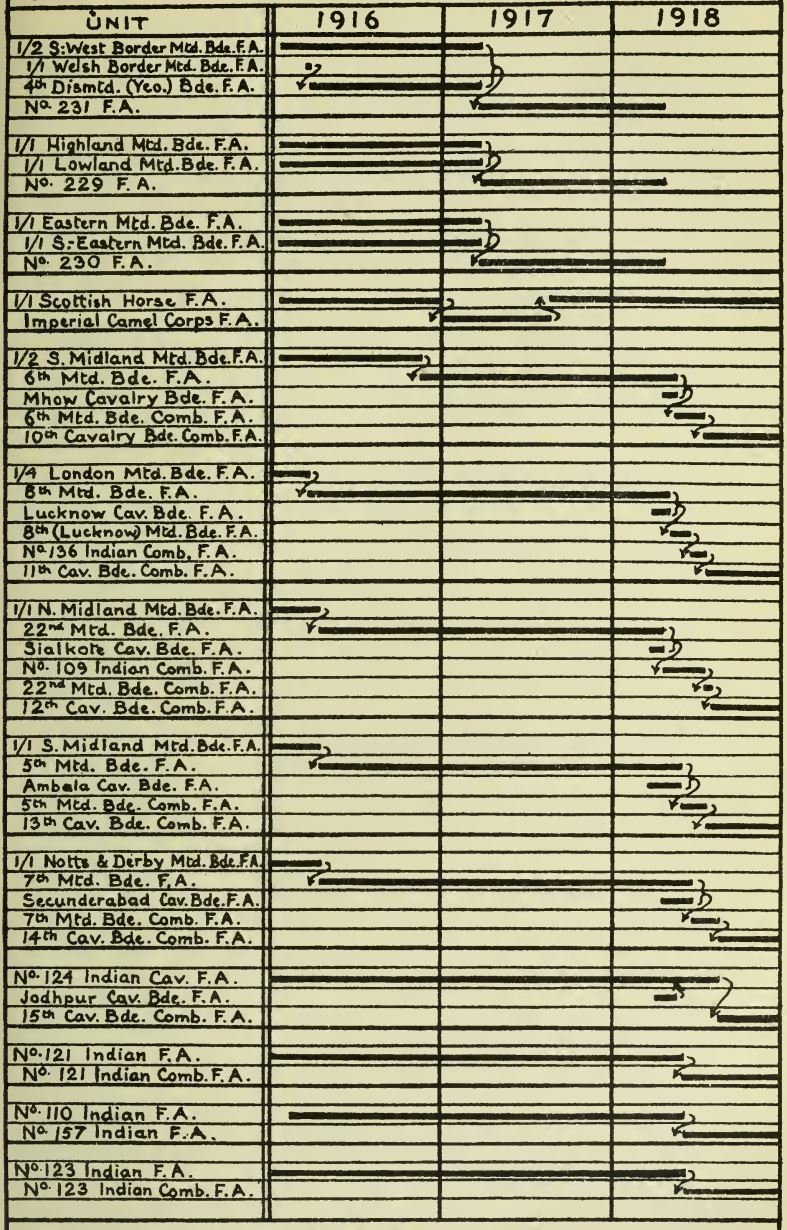
were several consultants, specialists and scientific workers attached to the administrative medical services. During the Dardanelles period there were at least six consulting surgeons, who took it in turn to serve in Egypt, Mudros or Gallipoli. A War Office Advisory Committee on Epidemic Diseases, known as the " Hunter Committee," under the chairmanship of Colonel W. Hunter, had its headquarters in Egypt and visited the various areas of operations in Egypt, the Dardanelles and Macedonia. A local committee, under Sir David Semple, the Director of Public Health in Egypt, was appointed by the D.M.S., Egypt, to supervise the sanitation of the Canal Zone. Lieut.-Colonel Sir R. Ross was sent by the War Office to Egypt and Macedonia in the summer and autumn of 1915 in connexion with anti-malarial measures. Lieut.-Colonel Leiper was appointed to investigate the causes of bilharziasis, and Major Austen to advise on fly and mosquito prevention. Their work is described in the volumes on the Hygiene of the War.

The Medical Units.

The Field Ambulances.—The only medical units which arrived with the Indian and Dominion Contingents and the 42nd Division (T.F.) in 1914, were the field ambulances. With the arrival of Yeomanry, and other mounted units, and with formations composed of Indian and British troops, the variety of field ambulances became great and the designations of many of them were frequently changed. There were R.A.M.C. field ambulances with British divisions, mounted field ambulances with Yeomanry brigades, Indian field and cavalry field ambulances and combined field and cavalry field ambulances for those divisions which included Indian units. Australian and New Zealand divisions and mounted brigades had their own field ambulances. All these changed their designations with each change of designation in the formation to which they belonged or were attached. British became Indian, Indian British, mounted dismounted, Yeomanry camel corps field ambulances, and practically every variety of change took place, as may be indicated by a glance at the accompanying chart, which shows how some field ambulances went through various phases of change, with, eventually, the entire loss of their original identity.

The equipment of field ambulances depended on the character of the operations. Desert transport replaced the ambulance wagons and cars in operations in the desert, but ambulance

CHART SHOWING THE CHANGES WHICH TOOK PLACE IN THE DESIGNATION OF CERTAIN FIELD AMBULANCES DURING THE EGYPTIAN AND PALESTINE OPERATIONS


UNIT
1916
1917
1918
1/2 S.West Border Mtd. Bde. F.A.
1/1 Welsh Border Mtd. Bde. F.A.
4th Dismtd. (Yeo.) Bde. F.A.
No. 231 F.A.
1/1 Highland Mtd. Bde. F.A.
1/1 Lowland Mtd. Bde. F.A.
No. 229 F.A.
1/1 Eastern Mtd. Bde. F.A.
1/1 S.Eastern Mtd. Bde. F.A.
No. 230 F.A.
1/1 Scottish Horse F.A.
Imperial Camel Corps F.A.
1/2 S. Midland Mtd. Bde. F.A.
6th Mtd. Bde. F.A.
Mhow Cavalry Bde. F.A.
6th Mtd. Bde. Comb. F.A.
10th Cavalry Bde. Comb. F.A.
1/4 London Mtd. Bde. F.A.
8th Mtd. Bde. F.A.
Lucknow Cav. Bde. F.A.
8th (Lucknow) Mtd. Bde. F.A.
No. 136 Indian Comb. F.A.
11th Cav. Bde. Comb. F.A.
1/1 N. Midland Mtd. Bde. F.A.
22nd Mtd. Bde. F.A.
Sialkote Cav. Bde. F.A.
No. 109 Indian Comb. F.A.
22nd Mtd. Bde. Comb. F.A.
12th Cav. Bde. Comb. F.A.
1/1 S. Midland Mtd. Bde. F.A.
5th Mtd. Bde. F.A.
Ambala Cav. Bde. F.A.
5th Mtd. Bde. Comb. F.A.
13th Cav. Bde. Comb. F.A.
1/1 Notts & Derby Mtd. Bde. F.A.
7th Mtd. Bde. F.A.
Secunderabad Cav. Bde. F.A.
7th Mtd. Bde. Comb. F.A.
14th Cav. Bde. Comb. F.A.
No. 124 Indian Cav. F.A.
Jodhpur Cav. Bde. F.A.
15th Cav. Bde. Comb. F.A.
No. 121 Indian F.A.
No. 121 Indian Comb. F.A.
No. 110 Indian F.A.
No. 157 Indian F.A.
No. 123 Indian F.A.
No. 123 Indian Comb. F.A.

THE BLACK COLUMNS INDICATE THE PERIODS DURING WHICH THE DESIGNATIONS REMAINED UNALTERED; THE ARROWS SHOW THE AMALGAMATIONS OR CHANGES IN DESIGNATION WHICH SUBSEQUENTLY OCCURRED.

13.2848 C. 5060/141.1500.11.23. H.M.S.O.,Cr.

cars were again given to them when roads were suitable. As a rule, especially in the operations of the Desert Column, the field ambulances were formed into mobile and immobile sections, the latter depending for their movements on any camel transport that might be required being provided at the time. The mobile sections were provided with camel cacolets, sand carts, sand sledges, and bicycle or wheeled stretcher carriers. These took the place of the normal ambulance car and wagon transport ; but a modified scale of motor ambulance cars was allotted to divisions. In this way two of the three sections of a field ambulance were made mobile, and one immobile.

Ambulance Convoys.—Only one organized motor ambulance convoy, No. 35, was sent to Egypt in March 1917 ; but motor ambulance convoys had been improvised for work at Alexandria, Cairo and Kantara, chiefly of cars provided by the Australian and New Zealand Governments, but also by ambulance cars of divisions sent to the Dardanelles, and by cars withdrawn from the divisions in Macedonia. Thus, there were at one time 45 cars at Alexandria, 30 at Cairo and 30 at Kantara.

For work with the columns motor ambulance convoys were improvised of the cars of field ambulances. Camel convoys were also formed with cacolets and litters as reserve convoys for clearing dressing stations over desert routes.

Ambulance Flotillas.—On the Canal ferry boats, motor launches, barges and steamers were used for the transport of sick and wounded. Two Nile steamers, the "Niagara," and "Indiana," were specially fitted as hospitals to carry 50 lying or about 200 sitting. They were employed for bringing patients from posts on the Canal to the hospitals at Port Said, Ismailia or Suez.

Casualty Clearing Stations.—In the early stages of the war Egypt possessed no casualty clearing stations ; but No. 1 Australian C.C.S. stayed in Egypt during the first three months of 1915, previous to going to the Dardanelles, and those with the Dardanelles Force returned with it to Egypt and remained there for a longer or shorter period until distributed to other theatres of war in 1916. Nos. 24, 26, 35, 53 and 54 C.C.Ss. were thus in Egypt in 1916 and were retained throughout the year. No. 24 went to France in March 1917 and No. 35 to Salonika in May 1918. No. 53 was re-designated No. 65, and No. 54 became No. 66 C.C.S. in July 1917. At the same time four new casualty clearing stations were organized, Nos. 74, 75, 76 and 77, in Egypt. Nos. 65, 75 and 77 were disbanded in June 1918, on the formation of new casualty

clearing stations, designated combined clearing hospitals; so that at the time of the armistice only Nos. 26, 66, 74 and 76 retained their original designation.

All these casualty clearing stations were employed on the Palestine Lines of Communication, under the administrative control of the A.D.M.S. of the L. of C.; but during the operations in the Sinai Peninsula they were directly under the D.D.M.S. of the Eastern Force or Desert Column. They were units at that time, which retained more or less the equipment of a casualty clearing station on mobilization scale, and did not expand into the large immobile units which were evolved during trench warfare on the Western front, and later in Palestine.

In 1918, when Indian Divisions replaced British Divisions in the XXth and XXIst Corps in Palestine, six combined casualty clearing hospitals for British and Indian sick and wounded were organized, and numbered 15, 24, 31, 32, 33 and 34. The first three of these came direct from India, and the last three were formed by the disbanding of Nos. 65, 75 and 77 C.C.Ss.

Ambulance Trains.—Ambulance trains were constructed in Egypt when the Indian Expeditionary Force arrived in December 1914. Three ambulance train units, designated X, Y and Z, were mobilized in Poona and sent to Egypt. They took over three hospital trains, which had been prepared in the railway workshops at Cairo in anticipation of their arrival. These trains were composed of nine coaches, of which seven were fitted for carrying twenty patients each in double-tier cots, with the exception of one, which was partly occupied by one of the medical officers, and as a dispensary and bathroom. There were also coaches for the commanding officer, personnel, kits, rations and other articles, and a dining car of the ordinary type.

A fourth and a fifth train were formed later on in 1915, the former staffed by personnel from one of the Indian hospitals. All these trains were employed in Egypt west of the Suez Canal. The Indian ambulance train units were eventually withdrawn in April 1916, and replaced by R.A.M.C. personnel. When a railway was constructed into the Sinai Peninsula, new ambulance trains were prepared or improvised. They had to be lighter than those employed on the lines west of the Canal. The first two of these, No. 6 and No. 7, were formed at the end of 1916, the former of six coaches of the London and South Western Railway, with fixed cots, and the latter apparently of converted third-class carriages with

the stretchers carried on slings. An emergency train was prepared with stretchers on Brechôt-Desprez-Ameline frames. They were used during the first battle of Gaza, and a ninth train was added after the battle. Up till then Egyptian Labour Corps and Camel Transport Corps sick and wounded and Turkish wounded prisoners of war were carried in coaches attached to these trains, but this proved inconvenient, and the coaches for them were formed into No. 10 and No. 11 Trains for Egyptian and Turkish sick and wounded.

After the invasion of Palestine, an ambulance train, No. 40, constructed in England for the Mediterranean Line of Communication, was sent to Egypt, and the trains No. 1 to No. 11 were re-numbered to avoid confusion with the numbered ambulance trains in France and elsewhere. Nos. 1, 2 and 3 became Nos. 44, 45 and 46 Ambulance Trains. Others were re-numbered 43, 47, 48, 49, 50, 51, 56, and 57; but changes in numbering occurred more than once, and are not clearly recorded. No. 49 and No. 57 were the new numbers given to trains Nos. 10 and 11 for Egyptians and prisoners of war. The general result, however, is that five trains were employed west of the Canal, and six or seven east of the Canal, while only one, No. 40, was of the type used in France and Italy.

As only Nos. 6 and 7 Trains were available east of the Canal during the operations in the Sinai Peninsula, a number of improvised truck trains were used as occasion required They went up with supplies to railhead and were fitted there by a sanitary section to carry slighter cases of sick and wounded on the return journey. The trucks had tarpaulin covers, and were provided with mattresses and pillows for the patients. Arrangements were made for hot meals being given at stations along the route. An orderly was placed in each truck, and this personnel, with the mattresses and pillows, returned to railhead in the next outward journey of an ambulance train.

None of these trains east of the Canal were permitted to cross the Canal into Egypt. They ran as far as Kantara on the east bank, and the sick and wounded were received into the medical units there, taken across the Canal in ambulance cars, and entrained on the west bank in the Egyptian trains for distribution to the hospitals in Egypt.

Hospitals.—The military hospitals in Egypt before the war have already been described. They were expanded to their utmost capacity. The 42nd Division brought no medical units with it other than its three field ambulances. Similarly, the two Australasian divisions arrived with field ambulances

only ; so that hospital accommodation had to be provided in the existing hospitals until general and stationary hospitals and casualty clearing stations in proportion to the number of troops and formations in Egypt arrived.

The units forming the 10th and 11th Indian Divisions were accompanied by field ambulances and by two Indian General Hospitals, No. 5* and No. 8, which arrived in Egypt early in December 1914. A third Indian General Hospital, organized by a voluntary committee and known as the Bombay Presidency General Hospital, arrived a month later. These hospitals were at first placed at Kantara and Suez, but were moved later to permanent buildings in the Citadel, Cairo, and in Alexandria, with a detachment at Suez. No. 5 Indian General Hospital remained in Egypt till the end of the war, being eventually concentrated at Suez, with a section at Kantara during the operations in Palestine. No. 8 and the Bombay Presidency Hospital returned to India in April 1916, after the 10th and 11th Indian Divisions were broken up.

Immediately after the Australian divisions arrived in Egypt the want of Lines of Communication hospitals for their sick and wounded was realized. A casualty clearing station (No. 1 Australian), two stationary hospitals (No. 1 and No. 2 Australian) and two general hospitals (No. 1 and No. 2 Australian) were organized and equipped in Australia on the scale of the corresponding units in War Establishments. They arrived in Egypt early in January 1915. Until then the sick of the 1st Australian Division were received into a temporary hospital in the Mena Palace Hotel, staffed by its field ambulances, and those of the 2nd Australian and New Zealand Division into the military hospital, Cairo. The casualty clearing station (No. 1 Australian) was placed at Port Said, where it formed a small hospital in anticipation of fighting on the Canal. It joined the Mediterranean Expeditionary Force in March 1915, returned to Egypt in January 1916, and went to France at the end of March 1916.

On arrival in Egypt No. 1 Australian Stationary Hospital was placed in the camp of the Australian Light Horse at Maadi, and No. 2 in the camp at Mena. The former moved to the base camps of the Mediterranean Expeditionary Force at Alexandria and went to Mudros in advance of the main body of the Dardanelles force. No. 2 accompanied the Force to the Dardanelles in April 1915, but returned in

* No. 5 had included in its organization sections of No. 6 Indian General Hospital.

January 1916 and remained with the Egyptian Expeditionary Force till the end of the war. No. 1 Australian Stationary Hospital also returned to Egypt from the Dardanelles and left in August 1916 for England.

A stationary hospital had also been organized in New Zealand. It went, however, to Salonika, returned to Egypt in March 1916, and left for France three months later. The only other New Zealand hospital unit in Egypt was a general hospital which became No. 2 Stationary Hospital and was opened in the Egyptian Army Hospital at Abbassia after the Dardanelles Expeditionary Force was organized.

No. 1 Australian General Hospital opened in the Heliopolis Palace Hotel and No. 2 in the Mena Palace Hotel on arrival, but the latter was transferred to the Gezira Palace Hotel

No. 17 General Hospital, Alexandria.

west of Cairo on the Mena camp breaking up. Both these units remained in these localities until they were moved to France with the Anzac Corps in March 1916.

These were the only medical units in Egypt until the Mediterranean Expeditionary Force was formed, other than the field ambulances and the Army Base Depôt of Medical Stores in Cairo. The amount of sickness, however, was great, and the hospitals, especially No. 1 Australian General Hospital, gradually expanded, taking over one building after another in Heliopolis, until it became a unit of considerable dimensions, with sections for infectious and venereal diseases. Eventually some of the sections developed into separate units and were taken over by the R.A.M.C.

When it was decided to undertake operations in the Dardanelles, four general hospitals were sent to Egypt from the United Kingdom, to act as base hospitals for the force.

Two (Nos. 15 and 17) arrived in March, and the other two (Nos. 19 and 21) at the beginning of June 1915. They were all opened in Alexandria, No. 15 in the "Abbassia Schools," No. 17 in the Victoria College, No. 19 in the Deaconesses' Hospital, a German hospital, and No. 21 in Ras-el-Tin barracks. They were nominally under the administrative control of the D.M.S. of the Mediterranean Expeditionary Force, Surg.-General W. G. Birrell, whose representative in Egypt was Colonel Sexton, the A.D.M.S. of the Base at Alexandria. The inconvenience of the administrative control not being in the hands of the D.M.S., Egypt, was, however,

Tented portion of No. 17 General Hospital, Alexandria.

obvious from the very first, and it was subsequently arranged to place them under the administrative control of the A.D.M.S., Alexandria District. With the exception of No. 15, which was closed in April 1918,* all of these general hospitals remained till the end of the war in Egypt.

The French "Armée Expéditionnaire d'Orient," under the command of General D'Amade, was encamped at Alexandria previous to embarking for the Dardanelles; and the sick from it were admitted to the French hospital in Alexandria and also to the Bombay Presidency General Hospital, which was close at hand. The latter was, in fact,

* The personnel of this hospital was transferred to Salonika to form No. 64 General Hospital there.

handed over to the French and the Indian sick transferred to the Indian General Hospitals.

During April 1915 great activity prevailed in Egypt in anticipation of a large number of sick and wounded being received from the Dardanelles. No. 1 Australian General Hospital was expanded, as already noted, by taking over the Luna Park Buildings and other buildings at Heliopolis, and the Hyat Hotel at Helouan, both of which could expand to between 1,500 and 2,000 beds each, while No. 2 Australian General Hospital, in moving from Mena Palace to the Gezira Palace Hotel, increased its accommodation to about 1,000 beds, retaining the Mena Palace Hotel as an overflow hospital.

Dining hall and ward at No. 17 General Hospital, Alexandria.

The Military Hospital in Cairo Citadel was expanded and improved. A fine modern hospital, the Austrian Hospital, at Choobra, near Cairo, was taken over for infectious cases. The Egyptian Government hospitals at Alexandria, Suez and Port Said were prepared to receive wounded, and the large native hospital, Kasr-el-Aini in Cairo, was also warned to be ready. The Greek hospital at Alexandria placed 170 beds at the disposal of the military authorities, and a convalescent camp was established at Mustapha The British Red Cross Society also began to take action in Egypt at this time and to establish convalescent hospitals, eventually providing some twelve or thirteen auxiliary hospitals. In this way the

hospital accommodation in Egypt was expanded from approximately 5,000 beds at the beginning of April 1915 to some 15,000 beds at the time the troops left for the Dardanelles.

There was, however, a great deficiency of nursing sisters, as Nos. 15 and 17 General Hospitals arrived without a nursing staff, on the supposition that they would be sent to the Dardanelles. The D.M.S., Egypt, consequently obtained, through the goodwill of various authorities, as many nurses as possible from civil sources and also the assistance of several ladies and a large number of nursing sisters from the Australian and New Zealand hospital units, which had brought with them ninety-two nurses each, or double the number in a British general hospital. Eventually a Principal Matron, Miss Oram, arrived on the 10th May 1915, bringing a few nurses with her. Shortly afterwards many more were sent from England. They were distributed to the various hospitals, and relieved the situation. Reinforcements of nursing sisters and members of Voluntary Aid Detachments then continued to arrive monthly, as well as batches of nurses from Australia and New Zealand, so that at the end of 1915 there was a considerable surplus of nursing sisters in Egypt. The Khedival Hotel, Alexandria, and the Semiramis Hotel, Cairo, were taken over for their accommodation.

Wounded began to arrive from Gallipoli without warning between the 29th and 30th April. Seven transports bringing a total of 125 officers and 3,221 men came during these days to Alexandria. A continuous flow of sick and wounded of the British Imperial troops, French and Indians then commenced to reach Egypt, and approximately 17,000 were landed by the 31st May. Hospital accommodation had to be continually expanded to meet the requirements; more especially was this the case with No. 1 Australian General Hospital, which eventually had some 8,000 beds in Heliopolis, Abbassia and Helouan. In these expanded Australian hospitals Arab labour was chiefly used for domestic purposes, and the feeding of the patients was done by contract with native cooks. This extreme expansion of No. 1 Australian General Hospital was due to the fact that although the British general hospitals had arrived or were arriving, they were not all ready to receive the first rush of wounded from the Dardanelles. The four British general hospitals, however, were expanded to 1,200 beds or more each, and to relieve congestion in them it was decided in May 1915 to transfer convalescents to Cyprus, where a camp for about 350 was formed. The difficulties of transport,

however, were great, and the Cyprus convalescent camp was abandoned towards the end of 1915.

By the end of June 1915, 27,000 sick and wounded, including 2,000 French wounded, were accommodated in Egypt. They were in course of being cleared to Malta, the United Kingdom, Australia and India, from Alexandria, Port Said and Suez. By the end of July, 31,214 British and 3,000 Indian sick and wounded had come to Egypt.

The Grand Hotel, Helouan, was then taken over and used as a convalescent hospital of 500 beds under military commandants.

The month of August 1915 threw a special strain on the hospitals in Egypt. The D.M.S. was always in the dark as to what was happening on the Gallipoli peninsula, the strength of the troops there, and the proportion of the sick and wounded likely to be evacuated to Egypt, but he endeavoured to maintain 10,000 vacant beds for casualties by making full use of convalescent hospitals and camps. Yet during August 1915, 32 transports or hospital ships arrived at Alexandria with about 20,500 sick and wounded officers and other ranks. Other hospitals were then opened, including a large British Red Cross Hospital in a building at Gizeh, outside Cairo, and at Alexandria a Red Cross Convalescent Hospital was opened in the Sultan's Palace at Montazah, in addition to a number of small Red Cross hospitals under the auspices of the British Red Cross Commissioner, Sir Courtauld Thomson.

A Canadian hospital (No. 5 Stationary) arrived at this time in Egypt and opened in the Cavalry Barracks, Abbassia, with 400 to 500 beds ; and a military hospital was organized in the Nasrieh School in Cairo for some 600 beds. At the end of 1918 it was re-designated No. 88 General Hospital.

From this time onwards till the withdrawal from the Dardanelles, Egypt was flooded with sick, chiefly dysentery and diarrhœa patients, just as up till then it had been flooded with wounded.

It was this fact and the large number of troops which came to Egypt from the Dardanelles at the end of 1915, suffering from dysentery, diarrhœa and epidemic jaundice, that led the D.M.S. to appoint Sir David Semple as President of the Sanitary Committee* to supervise the Canal area, where a large labour corps of natives was being organized. This committee developed into a Standing Committee† for the inspection of all the military camps in Egypt.

* Colonel Robinson, I.M.S., Major Lelean, R.A.M.C., Captain Austen and Captain Rae were the other members of the Sanitary Committee.

† Lieut.-Colonel Evan, Sir D. Semple, Lieut.-Colonel Cathcart Garner, Major Bagshawe and Captain Austen.

Owing to the large number of sick, other hospitals were opened in November 1915. Princess Fatima's Palace at Boulac, near Cairo, was lent as a convalescent hospital for British troops and took some 500 to 600 patients, and some of the hotels at Luxor were taken for convalescents. They were grouped under the designation "Convalescent Depôt," Luxor, and accommodated about 100 officers and 2,300 men. This depôt was some 500 miles by rail from Cairo and hospital trains ran there periodically. A large convalescent depôt was also opened in Abbassia in November 1915.

Great changes took place in the hospital accommodation in Egypt after the Dardanelles Expeditionary Force had returned, and after the Anzac Corps and other Corps were transferred to France. Additions to the general hospitals then were, No. 31 from England at the end of December 1915, which opened in Port Said, and No. 27 and No. 3 (Australian) from Mudros in February 1916. No. 27 opened in Police Schools, Cairo, and No. 3 (Australian) in the Abbassia barracks. They replaced No. 1 (Australian) and No. 2 (Australian) General Hospitals which went to France. No. 8 Indian and the Bombay Presidency Hospital, as already noted, left Egypt in April 1916, after the Indian divisions were broken up and the two Indian Divisions from France had been transferred to Mesopotamia. A section of No. 5 Indian General Hospital, which remained, had formed a hospital for Indians at Suez in January, which was called the Indian Base Hospital, Suez, at the beginning of April 1916.

When No. 3 (Australian) General Hospital left for France in September 1916, it was replaced by No. 14 (Australian) General Hospital, which remained in Egypt till the end of the war. It was at first at Abbassia, but, as a large Australian rest camp had at that time been established at Port Said, it eventually replaced there, early in 1918, No. 31 General Hospital, which went to Cairo.

During the period between the withdrawal from the Dardanelles and the operations in the Sinai peninsula, no more general hospitals or convalescent depôts were opened, but several stationary hospitals were added to the Egyptian list of hospitals. No. 18, which, however, left for Salonika at the end of 1916, and Nos. 24 and 26 arrived respectively in January, May and June 1916, and No. 36 in February 1917, all from the United Kingdom. No. 36 was opened on the sea coast at Mehamdiya in the Romani area, replacing No. 2 (Australian) Stationary Hospital, which had been transferred

there in November 1916. No. 2 (Australian) from the Dardanelles and No. 1 (New Zealand) Stationary Hospital from Salonika had returned to Egypt in January and February 1916, but the latter left for France three months later. No. 16 British Stationary Hospital of the Indian Establishment was also in Egypt during the first five months of 1916.

When General Sir E. Allenby's operations were in course of preparation many additions were made to the number of hospitals. In August 1917, No. 69 General Hospital arrived in Egypt from the United Kingdom, and four others, Nos. 70 71, 78 and 87, were organized in Egypt. Four stationary hospitals, Nos. 43, 44, 45 and 48, were also formed in Egypt at the same time, and a fifth, No. 47, came out from England. No. 45 went to Salonika in May 1918, and No. 43 was disbanded a month later at the time when Indian troops were replacing British.

Most of the stationary hospitals eventually went to Gaza, Mazaid (near El Arish) and Kantara, on the Palestine L. of C., and two of the general hospitals, Nos. 69 and 78, to Deir-el-Belah.

In April and May 1918, when the Indian divisions joined Sir E. Allenby's Force, seven hospitals, Nos. 39, 41, 44, 45, 50, 51 and 54 Indian General Hospitals were sent to Egypt from India or Mesopotamia. No. 45 absorbed No. 70 General Hospital, which was then disbanded. Five were placed on the Palestine L. of C., Nos. 41, 51 and 54 at Kantara, No. 39 at El Arish, and No. 44 at Deir-el-Belah. No. 50 was established at Suez.

The hospitals and convalescent depôts in Egypt during the war were thus of an ever varying character. There is no definite record of the total number of beds and occupied beds in them, week by week, but the following tables describe their number and character during the period of the Gallipoli campaign, and the approximate number of beds equipped month by month in 1915, when the numbers of sick and wounded received into Egypt were greatest. The number of convalescent camps or depôts during that year amounted to nineteen.

The hospitals, which were established in hotels, schools and in existing hospital buildings, were equipped with the usual general and stationary hospital equipment, but for the improvised hospitals the number of bedsteads obtainable in Egypt was very limited and native palm wood beds, comfortable

Statement of Beds Equipped.

Month.	British Hospital beds.		British Convalescent beds.		Total British beds.		Indian Hospital beds.		Indian Convalescent beds.		Total Indian beds.		Grand Total of beds in Egypt.	
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R..	Off.	O.R.	Off.	O.R.	Off.	O.R.
1st April 1915	200	3,780	—	—	200	3,780	35	1,415	—	87	35	1,502	235	5,282
1st May ,, ...	365	9,321	—	1,030	365	10,351	35	1,415	—	381	35	1,796	400	12,147
1st June ,, ...	458	10,661	50	2,104	508	12,765	35	1,415	—	410	35	1,825	543	14,590
1st July ,, ...	466	11,432	60	2,673	526	14,105	35	1,415	—	606	35	2,021	561	16,126
1st August ,, ...	597	14,087	64	3,492	661	17,579	35	1,415	—	896	35	2,311	696	19,890
1st September ,, ...	722	18,420	88	6,336	810	24,756	35	1,415	—	907	35	2,322	845	27,078
1st October ,, ...	706	17,602	83	6,895	789	24,497	35	1,415	—	400	35	1,815	824	26,312
1st November ,, ...	808	16,469	118	7,297	926	23,766	45	1,511	—	1,009	45	2,520	971	26,286
1st December ,, ...	817	17,383	149	9,156	966	26,539	43	1,429	—	800	43	2,229	1,009	28,768
1st January 1916	870	20,590	229	11,672	1,099	32,262	32	1,812	—	800	32	2,612	1,131	34,874

and strongly constructed, were available in practically unlimited number and at a cheap rate. Mattresses, stuffed with wool, were also prepared by local contract in unlimited numbers and in a very few days. These proved invaluable for the rapid expansion of hospitals. A large number of mattresses, 2,000, was also sent to the docks at Alexandria for use on transports at the beginning of the operations in Gallipoli. Blankets, sheets, towels and ward equipment were obtained from ordnance stores or by local purchase. An immense amount of help was obtained from voluntary sources in establishing these hospitals and especially from the Australian Red Cross Society, which provided a large number of hospital requirements both for British and Australian hospitals, and funds with which to purchase additional comforts.

On the whole, few places presented greater facilities than Cairo and Alexandria for establishing hospitals in suitable buildings, and it was fortunate that this was so, as otherwise hospitals would have had to be pitched under canvas, exposed to the sand and dust of the desert, as was the experience in Sinai and Palestine.

Egyptian Hospitals.—A large number of Egyptian hospitals was established for the sick and wounded of the Egyptian Labour and Camel Transport Corps. They were administered by an A.D.M.S., Lieut.-Colonel G. W. Heron, R.A.M.C., and were staffed by Egyptian medical officers, medical students and hospital orderlies, with a British supervisory staff of 18 medical officers, a quartermaster and 65 other ranks. The Egyptian staff was 62 medical officers or students and 400 other ranks. A D.A.D.M.S. was appointed on 1st October 1917 to assist the A.D.M.S.

In May 1917 there were 17 hospitals of this class with a total, approximately, of 2,500 beds, distributed in various posts on the Canal, Sinai L. of C., and in Egypt. The largest units were in Kantara (750), Ismailia (450) and El Arish (500 beds).

There were also sections for 200 prisoners of war in Kantara, for 200 at Deir-el-Belah, and for 60 at Port Tewfik. At Kantara and El Arish cholera hospitals for 30 and 60 beds respectively, and isolation cholera units with 30 beds each at Rafa, Deir-el-Belah and Sheikh Nuran were maintained.

The hospitals were numbered as Egyptian stationary hospitals and detention hospitals, and were moved as required in conformity with the operations in Palestine. Egyptian hospitals were thus brought up in 1918 to Ludd, Jerusalem, Jaffa, and elsewhere in Palestine.

In 1918 the Egyptian hospitals were greatly expanded. Thus in April, No. 6 expanded to 2,000 beds, No. 4 to 1,500, and all others to 150 beds each. To meet this expansion 16 medical officers and 150 medical orderlies were added to the staff.

The Egyptian hospital administration was also charged with the control of a segregation compound for 500 at Kantara, recruiting depôts at Roda Island, Sohag, Assiut and Esna, disinfecting plants at Kantara East and West, disinfecting railway vans, and various other disinfecting apparatus.

A convalescent camp for Egyptian Labour and Camel Transport Corps and sick and wounded was opened in March 1918 by the Public Health Department, under whose auspices the Egyptian hospitals were established and staffed. This convalescent camp moved to Ismailia at the end of the month. Convalescent camps were also established at Kantara for 1,000, and at Ludd, Jerusalem and Jaffa for 500 each.

All these hospitals received Turkish sick and wounded and Turkish interpreters were attached to the staffs.

The administration of these Egyptian units was reorganized in August 1918, when all Egyptian hospitals, and the medical and sanitary arrangements of the Egyptian Labour and Camel Transport Corps came under the administrative medical officer of the Corps, or area of the Palestine L. of C., or Egypt, in which they were established or employed. The A.D.M.S., Egyptian Hospitals, was then attached to the staff of the D.M.S. at G.H.Q., and his D.A.D.M.S. to the staff of the Palestine L. of C. Quarantine arrangements, however, remained under the control of the A.D.M.S., Egyptian Hospitals.

Another class of hospital, which did much useful work in Egypt, were the Government hospitals of the Public Health Department. Over 5,000 sick and wounded of the British and Dominion forces were received into them during the period of the Dardanelles Campaign and the Turkish attacks on the Canal. Two tented hospitals, one at Ismailia and the other at Suez, were lent to the military authorities as clearing hospitals for wounded enemy during these attacks, the equipment being drawn from travelling ophthalmic hospitals, while five permanent ophthalmic hospitals in towns in Lower Egypt* were utilized for Imperial, Australian and French

* Tanta, Mansura, Zagazig, Shebin-el-Kom and Damanhour. The Public Health Department hospitals of Upper Egypt at Beni Suef, Fayum, Minia, Assiut, Kena and Assouan were also placed at the disposal of the Army and were freely used for the reception of the sick from the Western Force.

sick and wounded. The clearing hospitals had only received 116 enemy wounded at Ismailia and 8 at Suez, when they were suddenly removed to Port Said on 1st May 1915 for the reception of British wounded from Gallipoli. The Public Health Department also established a hospital for 550 beds under canvas at Alexandria from May to October 1915, with a section at Zagazig for Senegalese troops. One hundred and fifty beds under canvas were also established at Port Said when the clearing hospitals moved from Ismailia and Suez. In November these tented hospitals at Alexandria (Glymenopoulo), Zagazig and Port Said were combined and moved to Gizeh near Cairo under canvas. All these hospitals were equipped and manned from various hospitals of the Public Health Department. The treatment of the sick and wounded in them was carried out by the Egyptian medical officers and gave the greatest satisfaction both as regards comfort of the patients and results. Approximately over 100 qualified medical officers and some 40 nursing sisters of the Public Health Department, Cairo, gave their services to the military authorities during the war in Egypt.

The administration of the hospitals remained in the hands of one of the officers of the Public Health Department He commanded the hospital at Glymenopoulo and afterwards at Gizeh.

The Egyptian Government hospital for native patients at Kasr-el-Aini, Cairo, under the charge of Dr. F. C. Madden, also received sick and wounded. From the 4th February to 15th April 1915, 166 enemy wounded and 40 enemy sick were sent to it. During May and June it received military patients, when it reverted to its civil functions; but was opened again for military patients in the middle of July. It received sick and wounded continuously to the end of the year, the total number being 1,998 wounded and 2,862 sick British and Australians from the Dardanelles.

Reception Stations.—The organization of a reception station was peculiar to Egypt. The first reception station was formed at Mustapha in August 1915, and continued there till August 1917, when it moved to Kantara with the various base depôts of the Egyptian Expeditionary Force, whose place at Mustapha was taken by a large " Details Camp " and Command Depôt

for malarial and light convalescent cases. After the removal of the reception station to Kantara its duties were as follows :—

(1) To take all sick parades of the various depôts there.

(2) To examine all drafts arriving from the United Kingdom and men discharged from hospitals, in order to ensure their cleanliness and freedom from infective diseases ; to eliminate all obvious unfits for front line duty, particularly amongst drafts from the United Kingdom ; to examine and register arrivals from hospitals and classify them for " temporary base " until they were passed by a medical board as fit for front line service or otherwise.

(3) To examine all outgoing drafts for lice or venereal disease and weed out unfits. The chief causes of unfitness were boils and septic sores.

(4) To carry out all inoculations for drafts proceeding to the front and also inoculate the personnel of stationary units near by.

(5) To prepare all cases for the medical boards. The president of these boards was a visiting medical officer and the members were provided by the reception station.

The reception station began duty with a staff of 7 medical officers and 12 other ranks R.A.M.C. In the beginning there was no proper camp for the R.A.M.C. personnel and the work of the unit was carried on in two marquees at the entrance of No. 24 Stationary Hospital and in one European privates' Indian pattern tent (E.P.I.P.) at No. 1 Infantry Base Depôt. Officers and men were living at various camps in the vicinity. In September a definite camping area was allotted to the unit and in October the station was opened in a self-contained camp. The staff consisted of 6 medical officers, 1 dispenser, 11 other ranks R.A.M.C. and 27 " B " men* attached. The accommodation was in six marquees, one as a Board tent, two together, with an E.P.I.P. tent as dressing rooms, and two with 26 beds as " observation wards." Later an infectious compound was added and a motor ambulance car was attached to the unit.

A dental depôt was also attached to it.

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* " B " men were men fit for duty at the base only.

Laboratories.—Mobile laboratories from the United Kingdom were not sent to Egypt until April 1918; but the Public Health Department of Egypt placed a railway car, fitted as a bacteriological laboratory, at the disposal of the military authorities in April 1915 for use in the Canal Defence Zone. In February 1917 it was re-designated No. 5 Military Laboratory, at a time when a series of six military laboratories was organized for work with the Egyptian Expeditionary Force. These laboratories were distributed along the L. of C. from Kantara to railhead, attached usually to a casualty clearing station or stationary hospital.

A pamphlet was issued to all medical officers containing instructions for a routine method of treatment and diagnosis, and, when full use of the stations for the latter purpose was made, good results were obtained. They were intended to assist medical officers in correctly differentiating malarial fevers from other febrile conditions, which might resemble malaria and which might consequently lead to a false diagnosis and delay in suitable treatment.

A central base laboratory, organized by Sir David Semple in the Hygiene Laboratory of the Public Health Department, was transferred to Kantara and attached to No. 24 Stationary Hospital. It was designated the Military Bacteriological Laboratory and supplied all the military field laboratories with special bacteriological equipment and trained personnel.

In addition there was an Anzac Field Laboratory which was attached to the Desert Mounted Corps.

Malaria Diagnosis Stations.—In order that severe cases of malaria might be early recognized and treated suitably a scheme was prepared by Captain P. H. Bahr, R.A.M.C., and submitted in February 1918 to the A.D.M.S., Palestine L. of C. The scheme suggested the formation of separate units, two for each corps, with a staff of specially trained medical officers and orderlies, and equipped with two microscopes and other necessary medical stores. The D.M.S. sanctioned the formation of the units and they were designated " Malaria Diagnosis Stations." On the 23rd March 1918, seven medical officers and sixteen orderlies were posted to No. 3 Military Laboratory for a month's course of instruction. At the end of April two units were detailed to each corps. Each unit was equipped with two bell tents, one E.P.I.P. tent, tables, lamps, two microscopes with slides, stains and other equipment. One general service wagon carried the unit.

Medical Stores.—The Army Medical Store in Cairo, which existed before the war, continued its work throughout. No. 4 and No. 5 Base Depôts were sent out from England in March 1915, and established at Alexandria. The former became a large base depôt, the Levant Base Depôt of Medical Stores, at the end of the year. No. 4 Advanced Depôt came with and was absorbed by it, till re-mobilized for Palestine in August 1917. Until the end of 1915 there were no other advanced depôts, with the exception of one Indian Depôt (No. 5)* Nos. 5, 6, 7 and 8 Advanced Depôts then came to Egypt, No. 8 being shortly afterwards absorbed in the Levant Base Depôt. Eventually it became a base depôt (No. 8) at Kantara, and another advanced depôt, No. 8, took its place on the Palestine L. of C.

The Levant depôt supplied medical and surgical stores, and equipment for the Dardanelles and Salonika Expeditionary Forces. It was replenished from the United Kingdom. The army medical store at Cairo supplied the medical units in Egypt and the advanced depôts during the operations. The advanced depôts were placed at Suez, Kantara and at railhead during the operations of the Eastern Force and Desert Column in the Sinai Peninsula. During the operations in Palestine they were placed at various points on the L. of C., the most advanced being No. 6, which opened at Ludd in February 1918. The others were at El Arish, Rafa, Deir-el-Belah and Gaza, but were moved from time to time in conformity with the military operations.

In the Alexandria district a central splint factory was established at No. 21 General Hospital at Ras-el-Tin. It originated in the great demand for splints of all kinds after the first landing in Gallipoli, and was commenced by Major Hey Groves on 25th May 1915. About 50,000 splints of all kinds were issued from this factory and distributed to Egypt, Macedonia, Mesopotamia, East Africa and some of the hospital ships. A staff of native workmen was employed in manufacturing the splints. Major Hey Groves was succeeded in charge of the factory by Colonel Edington who, in his turn, was succedeed in July 1917 by Major G. R. Livingstone. During the early part of 1917 there was some difficulty with the native labourers employed. Up to that time they had been obtained through a contractor, but when Colonel Edington took over charge he obtained authority to engage men direct, and this

* No. 5 Indian Depôt arrived in January 1915, and opened at Ismailia. It left for India a year later.

new method of employing labour proved to be very beneficial in every way, as no labour troubles subsequently occurred, and the men entered whole-heartedly into their work, and never failed during strenuous periods. The same difficulty was experienced in Egypt as in France with regard to the standardization of splints, owing to the demands of individual officers to have splints prepared according to their original designs or just a little different from standard patterns. The officer in charge of the factory prepared a useful illustrated catalogue and vocabulary of splints in consequence for the information of medical officers, and this was of great use in enabling them to obtain splints of a standard pattern to suit their requirements.

The medical services in Egypt owed much to the sympathy and help of the High Commissioner, Sir Henry MacMahon, Lady MacMahon and many ladies who worked voluntarily in the hospitals, especially during the periods when Egypt was flooded with sick and wounded from the Dardanelles. The Egyptian Civil Medical Service and the Public Health Department were invaluable in many directions, not only in receiving British sick and wounded into their hospitals, but in establishing and administering, as related above, a series of hospitals for the Egyptian Labour Corps, Camel Transport Corps and prisoners of war, and in organizing and carrying out extensive sanitary work in the camps. Some thirteen convalescent hospitals and three convalescent homes were opened by these voluntary workers during 1915. The Sirdar also sent, for temporary duty under the Director of Medical Services, some twenty officers of the Medical Corps of the Egyptian Army, some of whom were employed not only in Egypt, but also in Gallipoli.

Sanitation.

The sanitation of camps in Egypt and in the areas over which operations were conducted caused much anxiety and required constant supervision and arduous labour. Waste products in the earliest stages were removed by contractors, but there was little or no advance in maintaining a high standard of sanitation in these camps until incineration was introduced and became the recognized method of disposal of all forms of waste products.

Much difficulty occurred at first in the disposal of litter, offal, excreta and refuse. All conservancy work of the camps along the Canal banks was being carried out by contract, the chief camps being Kantara, Ismailia, Moascar near Ismailia,

Serapeum, Zagazig and Suez. Later, incineration methods were employed. Vermin were a constant source of trouble. Disinfestation was effected by the fixed sterilizers of the Public Health Department at Port Said and Suez, and by the portable Thresh disinfectors. Eventually, railway van disinfectors were brought into use and proved extremely useful and efficient. These van disinfectors were introduced into Egypt by Colonel W. Hunter in February 1916, as a result of his experience of their use in dealing with the epidemic of typhus fever in Serbia in 1915. Several were subsequently constructed and sent up the Palestine L. of C. for the use of divisions and corps in the front. They proved invaluable, and Colonel Hunter records that in the first three months of their work two double van disinfectors carried out the disinfestation of 170,000 kits, 170,000 overcoats, 340,000 blankets and great masses of ordnance clothing. They were the most prominent and effective measure of preventive work and by their means 60,000 men of the troops and native labour corps could have their clothing disinfected monthly. During twelve months, May 1916 to April 1917, amongst an average strength of 40,000 labour corps men, 495,000 disinfections were carried out. The Serbian barrel disinfector, originally designed by Lieut.-Colonel Stammers for use in Serbia in 1915, was also largely used in Egypt. A galvanized iron bin disinfector of the same design was subsequently introduced and became the recognized means of disinfection by the Public Health Department in Egypt and Palestine.

There was never any difficulty with regard to water supplies, for which there were filtration systems from the beginning at Suez, Ismailia, Port Said and Zagazig. For the most part water was conveyed in pipes, but to the more remote stations in water barges. The installation of a chlorinated and piped water supply from the Sweet Water Canal to the posts in Sinai was a later development, and is fully described in the volumes on the Hygiene of the War.

The sanitation of the camps in the Canal Zone was a source of trouble at all times, and required much supervision by the administrative and sanitary officers, and eventually by the Canal Zone Sanitary Committee. Divisions, units, transports, horses and camels, coming and going to and from the various camps, added greatly to the difficulty of maintaining a high standard of sanitation. At first sanitary sections had to be improvised, until definite sanitary sections, such as those sent to France, were mobilized for Egypt at a later stage.

The improvised sections were on the Indian model and consisted mainly of sweepers, sent from India. The officers of the Indian Medical Service to whom most of the sanitary work on the Canal area was entrusted, worked incessantly and successfully during 1915 to maintain a high standard of sanitation. The introduction of immediate incineration methods made a vast difference in the disposal of refuse of all kinds, and the health of the troops rapidly improved. When definitely organized sanitary sections arrived in Egypt men of the Egyptian Labour Corps were attached to them. They were specially employed in carrying out incineration processes and proved excellent workers.

An exceptionally interesting Medical Exhibition was opened at the Nazrieh Hospital in Cairo in March 1919, in which were shown a very complete collection of photographs, dealing with every medical aspect of the campaign, specimens and models of all the means of transport employed, models of all the sanitary appliances, and an unique collection of pathological diagrams and specimens dealing with the special diseases. It was open for four or five days, and special leave was given to officers and other ranks to visit it.

CHAPTER XX.

THE MEDICAL SERVICES DURING THE OPERATIONS AGAINST THE FOLLOWERS OF THE SENUSSI AND SULTAN OF DARFUR.

THE concentration of the Western Frontier Force at Mersa Matruh for operations against the followers of the Senussi was complete on the 7th December 1915. The force consisted of a composite mounted brigade and a composite infantry brigade. The former was composed of three Yeomanry regiments of the 2nd Mounted Division, a composite regiment of Australian Light Horse, the Notts. Yeomanry R.H.A., and ammunition column with auxiliary services; and the latter of three T.F. infantry battalions, the 15th Sikhs, the 1st Australian divisional train and a detachment of engineers from the Military Works Department of Egypt, with auxiliary services.

Patrols of infantry, the Bikanir Camel Corps, and an armoured train guarded the railway line from Alexandria to Dabaa, some 70 miles east of Mersa Matruh, and also the Moghara Oasis, some 100 miles due west of Cairo. Troops were also sent to various posts west of the Nile, to watch the approaches to it from the western oases further south. These troops formed what was called the Southern Force, as distinct from the Western Frontier Force under Major-General Wallace.

On the 11th and 13th December columns went out from Mersa Matruh and encountered the enemy, retiring afterwards to Matruh. The casualties on both days amounted to 1 officer and 22 other ranks killed and 8 officers and 66 other ranks wounded.

The force at Matruh was reinforced during December and formed into a right and left column. The former, composed of cavalry and infantry, was to advance against Gebel Medwa, 8 miles south-west of Matruh, where 5,000 Senussi were concentrated, and the latter, composed of Yeomanry and Australian mounted troops, was to make a wide detour and cut off the enemy's retreat to the west. A successful action was fought on the 25th December, the casualties being 14 other ranks killed and 3 officers and 47 other ranks wounded. The troops then returned to Matruh.

During the earlier part of January 1916 the operations of the Western Frontier Force ceased on account of torrential

rains, but after the weather cleared up, a column of 5 squadrons of Yeomanry, 1 of Australian Light Horse, 2 battalions of British infantry, 1 of the New Zealand Rifle Brigade, and 1 of the South African Regiment, with artillery, armoured cars of the R.N., a British and an Indian Field Ambulance and other details, moved out from Matruh on the 22nd January and bivouacked for the night at Bir Shola, about 19 miles further west. The enemy was then concentrated at a point 25 miles south-west of Matruh. On the following day the column advanced and a fierce action was fought 7 miles out from Bir Shola, resulting in the capture and burning of the enemy's camp. The casualties in the column were 31 killed and 291 wounded. They were brought back to Bir Shola with great difficulty owing to the deep mud of the route along which they had to be carried. On the 25th January the force returned to Matruh.

The column was then re-organized and its command taken over by Major-General W. E. Peyton on 9th February 1916. The Composite Yeomanry Brigade became the 2nd Mounted Brigade. A composite brigade of T.F. battalions under Lord Lucan was formed. The Sikh and New Zealand battalions were replaced by a South African brigade, and two sections of the Hong-Kong and Singapore Mountain Battery joined the force. Camel transport was organized with about 2,000 camels.

Decisive operations were then undertaken by the Matruh Force. The enemy was located at Agagia, some 14 miles south-east of Barrani, near Sollum. A column moved out on the 20th February. On the 24th February it camped at Wadi Maktil, where it was attacked on the following day, but with a loss to the column of only one man killed and one wounded. The enemy was then attacked at Agagia and a battle, resulting in his complete defeat, was fought on the 26th February. The column then marched to Barrani without opposition. The whole of General Peyton's force assembled there from Matruh on the 8th March, and advanced by the coast route to Sollum, which was re-occupied on the 14th of the month. Information was then received that the crews of the torpedoed ships were at a place some 75 miles west of Sollum. Armoured cars accompanied by motor ambulance cars went out and rescued them without loss.

On the 23rd November 1915 Lieut.-Colonel E. P. Sewell, R.A.M.C., was appointed A.D.M.S. of the Western Frontier Force. His D.A.D.M.S. (for Sanitation) had already proceeded

on reconnaissance of camp sites and water supply at Mersa Matruh together with the 15th Sikhs and a section of No. 137 Indian Field Ambulance. The other medical units appointed to accompany the force were the Notts. and Derby Mounted Brigade Field Ambulance, and the 1/1st South Midland Mounted Brigade Field Ambulance. The former was attached to the Infantry Column and the latter to the Cavalry Column. As the operations were to be conducted against tribes not likely to respect the medical services, all R.A.M.C. personnel were armed. The coastguard ship "Raschid" was taken over and equipped as a hospital ship at Alexandria. Trawlers had been considered for the purpose but were unsuitable. Arrangements were also made for sick to be brought back on the trains running between Alexandria and Dabaa, a N.C.O., R.A.M.C., being permanently placed on each train to arrange for their reception and take charge of them during evacuation to Alexandria. After organizing the chlorination of wells along the land route to Matruh, Colonel Sewell left Alexandria for the latter place by rail and car on the 10th December. The road from Dabaa to Matruh was bad with deep sand in many places, and the transport moved slowly and with difficulty.

During the fighting 14 miles west of Matruh on the 11th December the wounded were received into the Notts. and Derby Mounted Brigade Field Ambulance, a section of which was then at Matruh, having proceeded there by sea on 27th November. The wounded were embarked the next day on the coastguard cruiser "Abdul Monayon." The total number of wounded received at Matruh was 18, including 3 officers. The field ambulance had been opened with 50 beds in a large shop conveniently near the road and landing stage.

The South Midland Mounted Field Ambulance at this time was in scattered parties along the road, but part of the personnel, five light ambulance wagons and medical stores were at Matruh. The section of No. 137 Indian Field Ambulance occupied an Egyptian hospital building of fourteen beds.

The field arrangements that had been made for the operations of the 11th November were for the bearer divisions of the Notts. and Derby Field Ambulance and the Indian Field Ambulance sections to proceed with the force with three ambulance wagons, for a trawler to stand in close to the shore, and for motor-cars to work along the road to pick up wounded.

During the attack of 13th December near Ras Um Rakhum on the British force which remained there after the fighting

two days previously, two trawlers were sent out with a medical officer, five orderlies, and medical and surgical supplies on each. The trawlers returned on the morning of 14th December with 48 wounded, including 5 officers. The "Raschid" hospital ship arrived just as the wounded were about to be transferred to the field ambulances on shore, and the wounded and some sick were embarked direct on it for Alexandria. Six motor ambulance cars arrived the same day in response to a wire from the A.D.M.S. to the D.M.S., Egypt. They were employed with cavalry reconnaissance parties.

In the operations of the 25th December, when a column went out against the enemy at Wadi Merghib, eight miles from Matruh, a section of No. 137 Indian Field Ambulance with four sand carts, and the Notts. and Derby Field Ambulance bearer division with five light ambulance wagons accompanied the main body, and the South Midland Field Ambulance bearer division with five light ambulance wagons the Mounted Column. The ambulance wagons with the main body could not move off the Khedival road, on account of the exceedingly rough character of the ground, but they were sent forward to a point as near the action as possible, wounded being brought to them on stretchers or by the sand carts of the Indian field ambulance. The sand carts proved invaluable and picked up the majority of the wounded. The Indian field ambulance had opened a small dressing station under Major Seely, I.M.S., behind a ridge on which the guns were placed, and a large number of the wounded passed through his hands. Colonel Sewell, who was with the main body, ordered the motor ambulance cars to come up to the point on the road, which had been reached by the ambulance wagons, and to which the wounded were being brought. As each car was loaded it went off to Matruh, and in this way 50 wounded were brought to Matruh by the afternoon. The ambulance wagons were practically not used.

Several wounded had still to be collected after the force had retired to bivouacs for the night, but eventually all were brought in.

The ambulance wagons with the Mounted Column kept in close touch with the troops, but the A.D.M.S. sent out three Ford cars of the R.N. Armoured Car detachment along the road towards midday, and brought the wounded back, of whom there were only four.

The total number of wounded brought to Matruh was fifty-two. All except the very slight and very seriously injured were embarked on the hospital ship the next day.

Colonel Sir Victor Horsley arrived as Consulting Surgeon on the 29th December and left on the 31st December, having been summoned to see a seriously wounded case.

The chief want felt by the medical services during this battle was the need of pack transport, and consequently on the 27th December six pairs of camel cacolets were issued and fitted on camels.

On the 28th December the column, which went out to Jeraula, bivouacked there for the night and the following morning advanced against the enemy position, twelve miles further south. It was accompanied by the 1/1st South Midland Mounted Field Ambulance, less a tent sub-division, 10 light ambulance wagons and 6 camels with cacolets, and by the bearer sub-division of the section of No. 137 Indian Field Ambulance and 4 sand carts. Lieut.-Colonel T. H. Forrest, R.A.M.C. was appointed to act as S.M.O. of the column. His orders were to bring the casualties to Jeraula, where they would be taken over by the motor ambulance cars and brought to Matruh. The column returned to Matruh on the 30th December without having seen any of the enemy. The long march over rough ground, however, caused a number of men to fall out with blistered feet, and 143 had to be carried back in the ambulance transport. The motor ambulance cars, which were sent from Egypt, proved useless for work on the rough roads. The springs became flattened, the frames bent and the bodies loose. Consequently, application was made to the D.M.S. for Ford cars with light ambulance bodies to replace the heavier cars. Fourteen more pairs of camel cacolets arrived on the 2nd January 1916, so that the A.D.M.S. had then at his disposal 20 pairs of camel cacolets for 8 lying and 32 sitting patients.

When the column moved out again on the 12th January 1916 after a period of heavy rains it was accompanied by the 1/1st South Midland Mounted Field Ambulance (less a tent sub-division) with 5 camels and cacolets, and 3 stretcher squads of No. 137 Indian Field Ambulance and 4 sand carts, under Lieut.-Colonel Forrest as S.M.O. An operating centre was established in a house at Matruh. The column returned without casualties on the 16th January, but sixty-four footsore and unfit men had to be carried.

On the 17th January the 2nd East Anglian Field Ambulance and No. 54 Casualty Clearing Station were ordered to join the Western Force.

On the 22nd January the column moved to Bir Shola, 19 miles westwards along the Khedival road. The medical units with it were the 1/1st South Midland Mounted Field Ambulance (less a tent sub-division) with 10 light ambulance wagons, and " A " Section of No. 137 Indian Field Ambulance with its 4 sand carts. The 6 heavy ambulance cars and 6 Ford cars were sent to join it on the following day. During the battle, which ensued on the 23rd January, it was impossible to form a dressing station under cover as the ground was quite level and no shelter could be found. The dressing station had consequently to work under rifle fire. Only one of the heavy ambulance cars could come up, the remainder had stuck in the mud near Bir Shola. The wounded were then sent back in the Ford cars and transferred to the ambulance cars at Bir Shola at first, but on the second journey back the Ford cars went on to Matruh without transferring wounded to ambulance cars. As the fighting line advanced the dressing station was now further back out of the fire zone. The wounded were brought to it by the light ambulance wagons and sand carts, which went as close to the firing line as possible and picked up the casualties collected by the stretcher bearers. When fighting ceased at 5.30 p.m. all the wounded had been collected, but a difficult problem had then to be faced. The motor ambulance cars and wagons, which had been relied on to evacuate the wounded, failed to come up, owing to the state of the roads, and only the 10 light ambulance wagons and the 4 sand carts were available for carrying about 250 wounded. The G.O.C. then decided to bivouac on the spot. The wounded were made as comfortable as possible for the night under such shelter as could be provided. It rained heavily, and early in the morning evacuation of the wounded commenced. There were 70 lying down cases and all had to be carried by hand. Those able to ride, some 100, were carried on cavalry horses, and the remainder were loaded on to the ambulance wagons, limber wagons, gun limbers and ammunition carts. The progress was very slow owing to the heavy mud, the pace being only about one mile an hour. After five hours the train of supply wagons was met. The sitting cases were transferred to them, and the stretcher cases to the ambulance wagons, and in this manner the first bivouac was reached. On the 25th January the march was continued. Ford cars came up and brought the wounded to the point on the road where the motor ambulance cars were assembled. By 5 p.m. all had been brought in to Matruh, where the hospital

ship was waiting. The total number of wounded in this action was 261, of whom 10 were British officers, 3 Indian officers, 150 were British other ranks and 99 Indian other ranks. Ninety-seven of the wounded were evacuated on the 26th January by the hospital ship, and 23 on a transport, the "Messir." The hospital ship returned and evacuated 103 sick and wounded on the 28th January.

Colonel Sewell went back to Alexandria on the hospital ship to discuss future medical requirements with the D.M.S. and arranged for a supply of 20 sand carts, 50 pairs cacolets, and a stationary hospital to be sent to Matruh. No. 16 Stationary Hospital arrived according to this arrangement on the 31st January. It opened for work on the 11th February 1916, on which day Major-General Peyton assumed command of the Western Frontier Force at Matruh. On the 13th February a small force proceeded along the coast to establish an advanced base at Unjeila, 40 miles west of Matruh. A tent sub-division of the Notts. and Derby Field Ambulance accompanied it. On the 20th February the column left Matruh to advance to Barrani, 40 miles west of Unjeila. Both the South Midland and Notts. and Derby Field Ambulances went with it, the former to accompany the column beyond Unjeila and form a dressing station in the event of any battle taking place, and the latter to establish a casualty clearing station at Unjeila. All the transport of the Notts. and Derby Field Ambulance, 64 pairs of camel cacolets for 40 lying and 88 sitting patients, and 20 sand carts, were to accompany the South Midland Field Ambulance. The six motor ambulance cars were to work between Unjeila and the battle area, along the Khedival motor road to Sollum.

During the ensuing action of Agagia on the 26th February a dressing station was established behind a small hill. The motor ambulance cars were brought up to it, and the sand carts worked between it and the battle front, over an area about a mile in depth. The fighting ended at 1.30 p.m. with the flight of the enemy, and at 4 p.m. the ambulance cars left with 34 wounded for Unjeila, a distance of 50 miles, of which 47 were by road and 3 across country. In the cavalry charge 33 of the British who fell were instantly killed by the enemy, but 24 wounded were collected by the regimental medical officers and brought to the field ambulance the following day, when 70 wounded were taken on to Unjeila in two journeys of the ambulance cars. More sick and wounded were placed in the cars next day and sent back to Matruh.

The South Midland Field Ambulance was then moved up to Barrani.

The hospital ship "Raschid" was ordered to Unjeila and arrived early on the 27th February. An attempt was made to embark wounded on it, but owing to the heavy sea only five could be got on board. The following day the ship came closer in shore and eighty-six patients were taken on board before embarkation had to be abandoned on account of the rough sea. The embarkation was effected with great difficulty and risk, the ship's crew making twenty journeys to the shore and back in the boats. The patients that could not be embarked were taken to No. 16 Stationary Hospital, Matruh, in the motor ambulance cars.

Barrani now became the advanced base for further operations and the Notts. and Derby Field Ambulance was moved to it from Unjeila on the 6th March. A detachment of No. 16 Stationary Hospital was ordered up to Barrani and opened a 100-bedded hospital there on the 11th March. It arrived in the hospital ship on the 7th March. Arrangements had been made for the operations which commenced on the 9th March. The infantry brigade moved from Barrani that day accompanied by the Notts. and Derby Field Ambulance, with 18 sand carts, 11 camels with litter cacolets, and 50 with cacolets for sitting cases. On the 11th March the Mounted Brigade moved off accompanied by the South Midland Field Ambulance with 12 light ambulance wagons and 50 pairs of cacolets on camels.

The columns reached Sollum on the 14th March 1916, without opposition. On the 16th March the motor ambulance cars were brought up with great difficulty to the plateau above Sollum, and took part in the rescue of the British prisoners by the armoured cars on the following day. Ninety-one prisoners were brought back and transferred at the top of the pass to cacolets on camels. They left for Alexandria on the "Raschid" on the 19th March.

A detachment of No. 16 Stationary Hospital was brought up to Sollum on the 17th March. On the 29th March the Force, having accomplished its object, was dissolved.

The Medical Services with the Egyptian Southern Force.

The Southern Force Command was formed under Major-General W. E. Peyton on 20th January 1916, with headquarters in the Kasr-el-Nil barracks, Cairo. The force consisted of the 53rd Division and attached troops; 1st Australian Light

Horse Brigade, North Midland Mounted Brigade, Dismounted Brigade (Highland with the Scottish Horse), and a detachment of the Bikanir Camel Corps. They were distributed to various posts in the Nile Valley—at Wadi Natrun, Wardan, Fayum, Minia and Mena. The South Western Mounted Brigade (dismounted) joined the force in March and took the place at Minia of the Highland Mounted Brigade which moved south to Sohag and Assiut. Another dismounted brigade of the Welsh Border and South Wales Yeomanry with the Welsh Border Mounted Field Ambulance, also joined the force towards the end of March, and went to Wardan.

Colonel R. H. Luce, A.D.M.S. of the 2nd Mounted Division, was appointed A.D.M.S. of the Force, with Major G. C. Taylor as D.A.D.M.S.

The medical units were as follows :—

Scottish Horse Field Ambulance	Mena.
1st Highland Mounted Brigade F.A.	Sohag.
North Midland Mounted ,, ,, ...	Fayum.
Field Ambulances, 53rd Division	Wadi Natrun and Wardan.
Australian Light Horse F.A.	Wadi Natrun.
South Western Mounted Brigade F.A... ..	Minia.
No. 53 C.C.S. attached to Command	Wardan.

There were Government hospitals at Fayum, Minia and Beni Suef, where the headquarters of the Force moved from Cairo on 17th February 1916, and where Lieut.-Colonel Leiper was attached for duty in connexion with investigations into bilharziasis. His laboratory was in the Kasr-el-Aini Hospital, Cairo.

State hospitals at various other posts, such as Assiut, Sohag, Kena, Esna and Assouan, were also gradually opened for the reception of British sick and wounded as the force took up positions from north to south in the Nile Valley. The arrangements, which had already been in existence in other parts of Egypt, for the use of the State hospitals prevailed. A certain number of beds was placed at the disposal of British troops in each hospital according to estimated requirements. The administration remained entirely in the hands of the Egyptian Principal Medical Officer, but where it was convenient an English nursing sister was appointed as matron with the necessary staff of nurses under her. A R.A.M.C. medical officer

was attached to each hospital with a personnel of R.A.M.C. orderlies as required. The R.A.M.C. medical officer had medical charge of all British soldiers and was responsible for the discipline of patients and orderlies. The R.A.M.C. personnel, both officers and men, was furnished from the various field ambulances with the Force.

On 2nd March 1916 troops were moved to the Assiut area, and camps were formed at Minia, Deirut, Assiut, Sohag, Girga and Luxor along the Nile Valley railway.

At the beginning of April the Southern Force was merged into the Western Frontier Force, on the completion of the Sollum operations by the latter, and Colonel Luce then became A.D.M.S. Western Force, with Major C. P. Thompson as D.A.D.M.S., and Major Taylor as Sanitary Officer. Major Thompson only remained a short time as he was recalled for duty with the Public Health Department a fortnight later, Major Taylor taking his place as D.A.D.M.S. The headquarters returned to Cairo from Beni Suef, and Sollum, Matruh, Dabaa and Hammam became stations in the Command.

The only other medical unit then added to the Force was No. 16 Stationary Hospital, which had detachments at Sollum, Matruh and Dabaa. The Force was divided into two subordinate commands, a Northern consisting of the Western Coastal area, Wadi Natrun, Fayum and the Nile Valley as far as Minia, and a Southern, consisting of the Nile Valley south of Minia. An A.D.M.S., Lieut.-Colonel Evatt, administered medically the Northern section, and a S.M.O., Lieut.-Colonel J. W. Mackenzie, the Southern section.

A Governor of the Western Frontier was appointed, with Major McAllan, R.A.M.C., as his principal medical officer at Matruh.

There was little activity on the Western front subsequently, but various changes in the medical units took place.

No. 53 C.C.S. left the force in May 1916 and No. 54 joined it in September 1916. The medical arrangements consisted of the establishment of a series of hospitals in the Nile Valley, including No. 54 C.C.S., which went to Minia. It left, however, on the 3rd December 1916 for the Canal Zone. Field ambulances equipped with desert ambulance transport were attached to the columns moving to the Western oases, and railway coaches were fitted for sick and wounded on the railways running westwards from the main line in the Nile Valley. The field ambulances also opened camp hospitals for treatment of slighter cases at all the principal camps. These hospitals

were tented except in one or two instances when reed huts were constructed. Cases requiring special or prolonged treatment, and all venereal cases, were sent to the general hospitals at Cairo. During the hot weather a considerable number of men were also sent to convalescent hospitals in Cairo.

For evacuation of sick from the field ambulance camp hospitals to the State hospitals, and from the State hospitals to Cairo, full use was made of the railways. On each of the oases railways, namely on the Wadi Natrun and Kharga lines, an improvised hospital coach was in use. These coaches were formed by fitting up a passenger coach with stretchers supported on slings according to Zavodovski's method. Each coach took twelve patients arranged in two tiers, and this allowed for a small area at one end of the coach where water, medical comforts, and dressings could be stored, and where warm drinks could be provided by means of a Primus stove. One R.A.M.C. orderly was in charge of the coach. On the main line a similar coach was used for collecting sick and conveying them to the hospitals at Sohag and Assiut. Another similar coach was employed regularly on the coast line between Dabaa and Alexandria to evacuate the sick from the various posts along that line. Sitting cases were evacuated by ordinary trains. On four different occasions one of the regular hospital trains was used in time of pressure to evacuate the accumulations of sick from the State hospitals. From the coastal stations of Matruh and Sollum sick were evacuated by the hospital ship " Raschid."

In the local conveyance of sick motor ambulance cars were used in Fayum and in the larger towns of Minia and Assiut where there were fair roads. The local roads of Upper Egypt were almost entirely made along the sides of the irrigation canals. Mud from the bottom of the canals was used to make these roads. When dry and carefully supervised they made fair motor roads, but in wet weather they were quite impassable for motor traffic. In the actual desert, cars could be used with great advantage, but the surface varied greatly in different districts, and also in different parts of the same district. In many parts there were wide stretches of the best possible going, in others where the limestone was near the surface, and where the sand had been swept off it, it was very stony and damaged the tyres. In other places where the sand had drifted the cars often stuck in the soft sand. For desert work it was found necessary to have cars with high axle clearance and high engine power relative to weight. The

expedient of carrying four long boards with bevelled ends on to which the wheels of the car could be lifted when stuck in soft sand proved a most effective method of extricating them from difficulties. On the whole it was proved by experience that there were few parts of the western desert which could not be made accessible to motor ambulance cars. It was, however, sometimes necessary to make long detours to find a practicable road.

All the medical units were equipped with sand carts and camel cacolets for transport of sick. Sand carts were most useful where motor cars could not go. There was little need to have recourse to camel cacolets for the routine work of evacuating sick. For the expeditions which were prepared for the advance to Baharia and Dakhla, cacolets were provided in considerable number, as it was doubtful if motor ambulance cars could be got through the sand dunes which bar the roads, and the carrying of water for mules necessitated the cutting down of mule-drawn sand carts to a minimum. An attempt was made to apply camel draught to sand carts, but it was not very satisfactory. Ordinary ambulance wagons were useless for desert work, but were used in some parts of Upper Egypt where the roads were too bad for motor ambulance cars.

The troops on the whole were healthy. The percentage of ration strength admitted to hospital weekly varied for the whole force from 1·5 per cent. to 3·1 per cent., but the highest local records reached 12·93 per cent. and 8·9 per cent at one time, owing to a very extensive outbreak of sandfly fever at Assiut and Minia, the symptoms resembling influenza. On the whole the troops stood the hot summer in camp remarkably well. Their general condition and moral suffered very little, though it was thought that European troops would not be able to stand the heat of Upper Egypt in summer. The men were worked very lightly, and orders were issued that no avoidable duty should be carried out between the hours of 9 a.m. and 5 p.m. during the summer months.

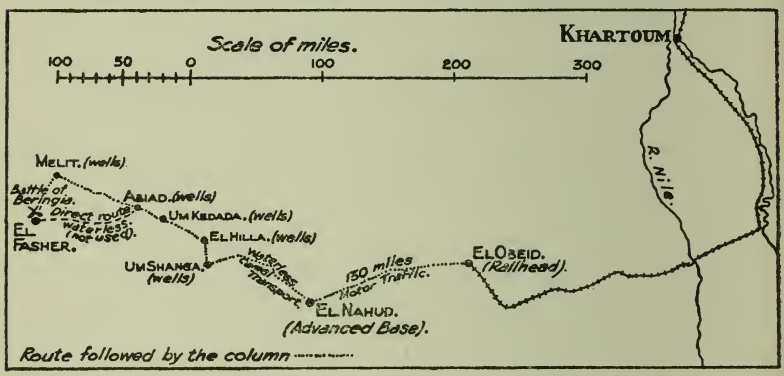
The Western Force was amalgamated with the Delta District to form the Delta and Western Force District on 15th March 1917. Colonel Luce had left the Force a month earlier to take up the appointment of A.D.M.S., Imperial Mounted Division in the Eastern Force, Desert Column, and his D.A.D.M.S., Major G. C. Taylor, was then left in administrative charge.

The medical situation may be followed by reference to the sketch map in the previous chapter.

The Medical Services during the Operations against the Sultan of Darfur.

The Darfur operations were conducted by a force of 165 officers and 3,079 other ranks. The medical personnel were 5 British and 10 Egyptian officers and 93 other ranks of the Egyptian Army Medical Corps. Major A. G. Cummins, R.A.M.C., accompanied the column as A.D.M.S., and Captain C. Cassidy was in medical charge of the advanced troops. Two sections of an Egyptian field hospital, a casualty clearing station, and a section of a Camel Box Field Hospital* of the Egyptian Army organization, formed the medical units of the force. Each of the battalions or other units had two panniers.

Operations against the Sultan of Darfur 1916.



In the first phase, the occupation of Um Shanga and Jebel-el-Hilla, a detachment of one of the field hospital sections with two Egyptian officers and ten other ranks accompanied the Force. An Egyptian officer had medical charge of the Camel Corps with a pair of panniers. Medical Corps orderlies with haversacks were with the Camel Corps companies and with the artillery, engineers and mounted infantry detachments. The casualty clearing station was at the advanced base El Nahud, about 150 miles from railhead. All medical personnel and equipment were carried on trotting camels.

During the second phase, involving the occupation of the line of wells from Jebel-el-Hilla to Abiad, the remaining field

* The Egyptian Field Hospital was a recent organization, in which the equipment was in light loads of 50 lbs. each, capable of being carried by bearer or pack transport. The Camel Box Field Hospital was the old organization with equipment in heavy loads in boxes 150 lbs. each for camel transport only.

hospital section and the casualty clearing station were moved up to Jebel-el-Hilla. The sick were evacuated to the Camel Box Hospital Section, which was transferred from the railhead at El Obeid to El Nahud. During the advance a complete field hospital section with one British and two Egyptian officers accompanied the column.

The final phase, terminating in the occupation of El Fasher, required a special medical organization. A British maxim gun section manned by men of the R.G.A., a detachment of mounted infantry, three batteries of artillery, four companies Camel Corps, a Sudanese and Arab battalion formed the force. The medical unit was one field hospital section. An Egyptian medical officer and eight orderlies of the Medical Corps were attached to units, and a R.A.M.C. orderly to the maxim gun section.

A section of a field hospital was brought up from El Obeid to El Nahud, and the Camel Box Section from El Nahud to Jebel-el-Hilla, relieving the casualty clearing station there, which was advanced to Abiad. Major Parsons Smith, R.A.M.C., was placed in charge of all medical arrangements along this line of communication. It was arranged that the casualty clearing station should move to El Fasher whenever it was occupied and set free the field hospital section for further operations with the column.

Camel transport was used entirely for personnel and equipment. Camel cacolets and wheeled stretchers were employed as ambulance transport. The wheeled stretchers were drawn by camels, for which a simple form of harness was devised. One camel could pull unloaded two of the wheeled stretcher carriers, which thus formed a four-wheeled vehicle. A spare camel was led with it, to be harnessed to one of the carriers when loaded.

During the action of Beringia, which was fought on 22nd May, the day before the column entered El Fasher, the medical units were in the centre of the square formation.* Tents were rapidly pitched, and within twenty minutes after the fighting had ceased all the wounded were under cover and attended to. The numbers of wounded were 1 British and 2 Egyptian officers and 18 other ranks. Two of the rank and file were killed. All the wounds were caused by solid lead ·450 bullets fired from a Remington or Gras type rifle. There was only one

* In the centre of the square the ground fell to a hollow, and the field hospital was thus well under cover, although the tops of the tents, which were exposed, were riddled with bullets.

case of subsequent suppuration. The wounded were taken on in the wheeled stretcher carriers and cacolets to El Fasher, and a hospital established there in buildings. On the 26th May the casualty clearing station came up from Abiad, and a large number of enemy wounded were brought in and treated in it. About fifty were serious cases and in a septic condition. The enemy had been in massed formation about 12,000 strong, and had attacked the square on two faces, many coming to within 20 yards of it.

These successful operations were carried out over a waterless tract of country, consisting of open rolling downs with scattered bush. The surface, never very hard, became heavy and loose in places, rendering marching slow and tiring. In some areas the bur of the "heskaneet," a thorny grass, got into puttees, blankets and socks, the small thorns entering the skin and giving rise to localized abscesses.

The weather was very hot, but few men fell out on the march. Water was the chief difficulty, only six quarts daily for each man being allowed for all purposes on the line of march. One difficulty arose from the water in the metal water-bottles becoming too hot to drink.

The Maxim Section consisted of fifteen rank and file, all old British soldiers, with previous experience of service in hot climates. They were mounted on trotting camels. No serious disease occurred amongst them, but minor ailments such as diarrhœa and mild fevers were common.

The rations were good and sufficient, fresh meat being available at all times. A field force canteen was brought up and luxuries such as sugar and tobacco could then be purchased. One ounce of lime-juice was issued twice weekly when fresh vegetables were unobtainable.

The sick statistics were as follows :—

	March.	April.	May.
Number of admissions	92	115	172
Average daily sick	27	47	73
Percentage daily sick to strength ..	1·38	2·19	2·64

The Camel Corps had the largest number of admissions, chiefly on account of venereal disease, which accounted for nearly half of the sickness.

In the Arab battalion there was a considerable amount of pneumonia, but otherwise the health of the men was excellent. This battalion had neither blankets nor ground sheets, and the medical officers attributed the incidence of pneumonia to this.

CHAPTER XXI.

THE MEDICAL SERVICES DURING THE OPERATIONS IN THE SINAI PENINSULA.

UNTIL the Egyptian Expeditionary Force was formed after the withdrawal from the Dardanelles in 1916, no operations were conducted with a view to driving the enemy out of the Sinai Pensinsula. On the other hand, enemy forces approached the Suez Canal from time to time, and the medical arrangements in this area were concerned with the provision of medical assistance at the various defensive posts along the Canal banks, and with the organization and supervision of sanitary services.

The medical units during this early period were the field ambulances, which came from India in November and December 1914 for service with the two new Indian divisions, the Indian Imperial Service Cavalry Brigade and the Bikanir Camel Corps.

When it was known that a large body of the enemy had entered the Sinai Peninsula early in January 1915, medical preparations were made for the impending attack on the Canal. The Indian field ambulances, or sections of them, were distributed to the various defensive posts. They were provided with camel cacolets and sand carts for ambulance transport, to enable them to accompany the patrols. Barges for conveyance of wounded were prepared at Port Said under Major Heron, of the Egyptian Medical Service.

Wounded in No. 1 Section of the Canal Defences were to be taken to the Civil Hospital in Suez, in No. 2 Section by launch or rail to Ismailia, and in No. 3 Section by launch or rail to Port Said. The three hospital trains were in garage, one at Port Said and two at Zagazig. No. 4 Train, manned by personnel from one of the Indian General Hospitals, was kept at Cairo.

A clearing hospital of 100 beds for Indians was organized at Ismailia by a section of No. 5 Indian General Hospital, and another for Dominion, British and naval units by the Australian Clearing Hospital. At Port Said there were two sections of one of the Indian field ambulances and an Australian stationary hospital.

Two clearing hospitals were prepared by the Egyptian Public Health Department, one at Ismailia and one at Suez, for wounded Turkish prisoners, as noted in Chapter XIX.

During the attacks on 3rd and 4th February 1915, the number of wounded was comparatively small. They were all cleared to Ismailia and from there by train to Cairo.

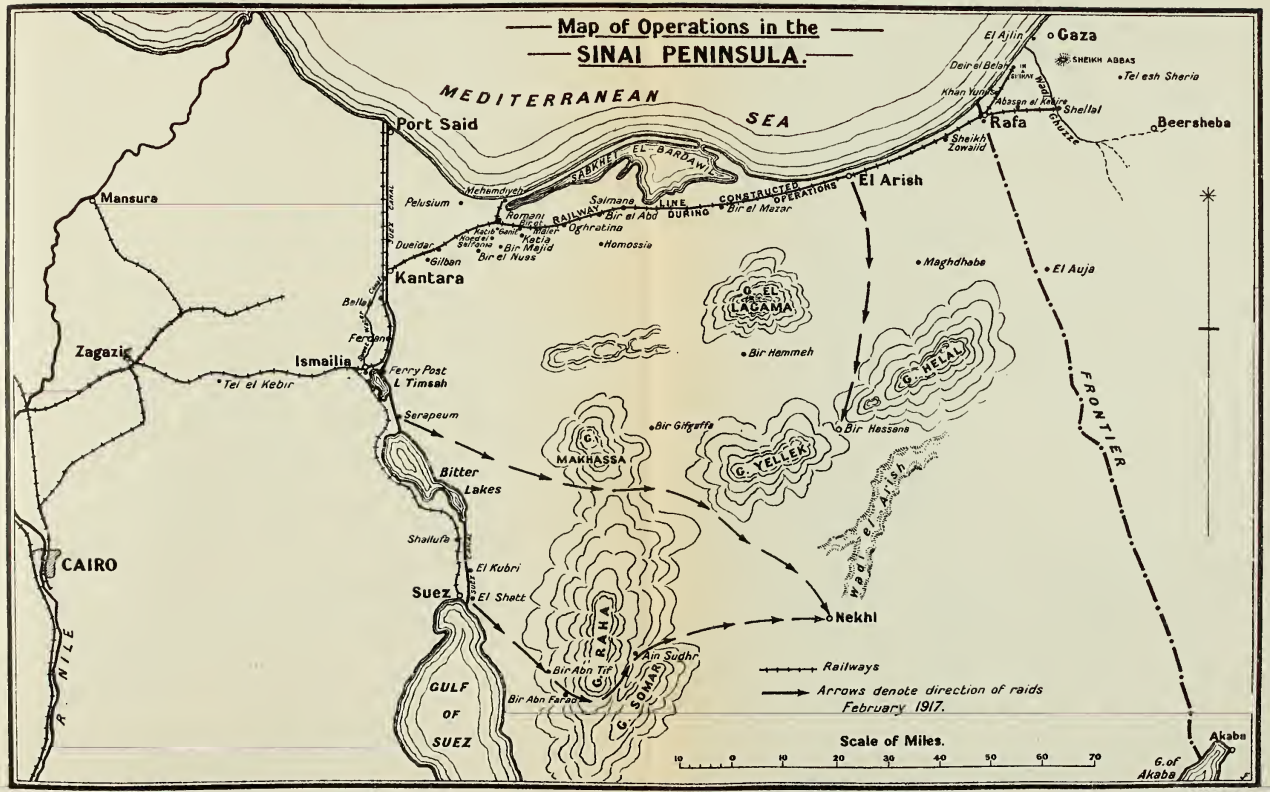
During the remaining months of 1915 the chief work of the medical services in the Canal Zone was in connexion with the sanitation of the camps, the reception of Indian sick and wounded from France and the Dardanelles, and their evacuation in hospital ships or transports from Suez to India. For administrative purposes the 10th and 11th Indian Divisions were amalgamated, and the staff for medical services then consisted of Colonel Robinson, I.M.S., as D.D.M.S., Lieut.-Colonel Burden, I.M.S., as A.D.M.S., Captain Whitworth Jones as D.A.D.M.S., and Major Graham as D.A.D.M.S. (Sanitation).

There was much difficulty in maintaining a good standard of sanitation in the camps. The sick-rate was high, especially on account of dysentery.

The personnel of the Indian field ambulances was constantly depleted to find reinforcements for Indian medical units in the Dardanelles, and to supply staffs for transports employed as carriers of sick and wounded, and, generally speaking, the Indian medical units were nearly disorganized by this distribution of their personnel and also by sections of some being transferred to places widely apart, such as the Western frontier in Egypt, the Dardanelles and Salonika.

Congestion in the Indian hospitals was great, owing to the programme of evacuation to India being irregularly carried out, and the number of hospital ships available being insufficient. The reinforcement drafts from India and Australia brought with them many men who were suffering from diseases or otherwise unfit for service, and these too added to the congestion in the medical units. A convalescent camp for Indians was consequently established at Suez to relieve the hospitals.

During July 1915, when Indian brigades were transferred to Aden, Mesopotamia and the Dardanelles, two weak Indian brigades and the Bikanir Camel Corps were the only Indian formations left on the Canal. The gaps were then filled by Yeomanry units. The situation remained unaltered until the expeditionary force returned from the Dardanelles, and the Canal defences came under the command of the Mediterranean Expeditionary Force on 24th January 1916.



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Preliminary arrangements were then commenced for moving troops east of the Canal. Roads and a Decauville railway were pushed on from Kantara towards the Katia district, and from Port Said to Mehamdiya on the coast north of Katia and Romani, pending the construction of a broad gauge railway. Water convoys on camel transport were also organized to supply water to the troops until a pipe-line from the Sweet Water Canal was laid. At this time the medical arrangements were somewhat confused owing to the original Canal defence arrangements becoming mixed up with the medical arrangements of the Dardanelles force then concentrating and being reorganized in the Canal Zone.

The camps were in bad condition, and new camps were being occupied east of the Canal before their sanitary arrangements were ready, and much work had to be done to bring the medical and sanitary services into some kind of order for the advance.

The D.M.S. of the Force for the time being was Surg.-General W. G. Bedford, with Colonel Keble as his A.D.M.S., and Colonel Melville as A.D.M.S. (Sanitation). Surg.-General Maher succeeded Surg.-General Bedford in April 1916, and as the dual command in Egypt had then been abolished and Surg.-General Ford, the D.M.S., Egypt, had left, he became the D.M.S. for all the military medical services in Egypt and its frontiers, with his headquarters at Ismailia. At that time there were in Egypt 11,162 hospital beds for British troops, exclusive of the accommodation in the Indian and Egyptian hospitals. There was also accommodation for 4,646 convalescents.

In February and March 1916, there were no active hostilities beyond reconnaissance of the enemy situation in the Sinai Peninsula.

There was a large number of medical units in the zone, many of them in a stage of transfer to other theatres of war. They were distributed as follows :—

Medical Units in the Canal Zone in February 1916.

Suez Section.

At Suez ..	..	No. 5 Indian General Hospital. Nos. 17 and 18 Stationary Hospitals. No. 11 Casualty Clearing Station. No. 16 Sanitary Section. No. 6 Advanced Depôt Medical Stores. Pathological Laboratory.
At Shallufa	..	No. 35 Casualty Clearing Station. No. 22 Sanitary Section.

At El Kubri ..	No. 14 Casualty Clearing Station. No. 30 Sanitary Section. "C" Section No. 137 Indian Field Ambulance.
At El Shatt and Ain Musa.	Indian field ambulances.
	Ismailia Section.
At Ismailia and Moascar.	No. 1 Australian Stationary Hospital. New Zealand Stationary Hospital. No. 2 Australian Casualty Clearing Station. No. 8 Base Depôt Medical Stores. No. 7 Advanced Depôt Medical Stores. Nos. 24 and 30 Sanitary Sections. Two sections No. 124 Indian Combined Field Ambulance. Bacteriological Laboratory.
At Serapeum ..	No. 1 Australian Casualty Clearing Station. Australian Sanitary Section.
	Port Said Section.
At Port Said ..	No. 31 General Hospital. No. 15 Stationary Hospital. No. 26 Casualty Clearing Station. No. 28 Sanitary Section. No. 5 Advanced Depôt Medical Stores. Bacteriological Laboratory.
At Kantara ..	No. 54 Casualty Clearing Station. No. 71 Sanitary Section.
At El Ferdan ..	No. 24 Casualty Clearing Station. No. 21 Sanitary Section.
At Ballah ..	No. 18 Sanitary Section.
At Tel-el-Kebir ..	No. 2 Australian Stationary Hospital.

Field ambulances were with divisions, generally with brigades.

When the Canal Sections were organized for an active defence, No. 3 Section based on Kantara became the Mobile Column, with Colonel Girvin as D.D.M.S. There were then in No. 3 Section or in the Canal area No. 31 General Hospital, in the Canal works on the east of the Canal at Port Said, No. 5 Advanced Depôt Medical Stores at Port Said, No. 26 C.C.S. at Kantara East, No. 2 Australian Stationary Hospital at Ismailia and No. 24 Stationary Hospital at Moascar. There was a sanitary section at Port Said, Kantara and Moascar. Field ambulances were with their divisions, the 42nd, 52nd and 53rd, and mounted field ambulances with the Australian and New Zealand Mounted Division, and with the Yeomanry brigade, which formed the mobile forces for the advance into the Katia district. In April mounted troops were occupying

outposts in and beyond Katia,but were attacked on 23rd April 1916, with the loss of three and a half squadrons of Yeomanry at Oghratina and Katia, as already narrated.

After the enemy attack in April the British line was withdrawn to Dueidar, and formed an entrenched position from the coast at Mehamdiya to Romani and Katib Gannit, until the railway line was sufficiently advanced for a move farther east. This was the situation on the 4th August when the enemy attacked in force and the battle of Romani was fought.

The Turks had concentrated in the neighbourhood of Katia and on that date attacked the British line from the east, south and south-west. Fighting continued till the 12th August,

Camel cacolets as used in Sinai and Palestine.

the enemy being driven back with great loss, and forced to retire to El Arish. His casualties were estimated as 9,000 out of a force of 18,000. The captures included 4,000 prisoners and two complete field hospitals.

The situation at the time of the battle was as follows. Romani was railhead, being connected by a narrow gauge line with the broad gauge line, which had then reached Gilban. A narrow gauge branch line also ran from Gilban to Dueidar, and another from Mehamdiya to the east bank of the Canal at Port Said along the coast. A metalled road had been constructed from Kantara to Gilban, and the narrow gauge railway was continued along this road as far as Kantara alongside the broad gauge. The 42nd Division was on the left in the trenches at Mehamdiya and Romani, with one

brigade on a hill farther back near Pelusium. A brigade of the 53rd Division was north of Romani, and the 52nd Division in the trenches between Romani and Katib Gannit. The Australian and New Zealand Mounted Division and Yeomanry brigade were on the right flank between Katib Gannit and Dueidar. The ground over which the battle was fought was loose sand and undulating, and the heat excessive, so that the men suffered much, especially from thirst.

Dressing stations were established by the 42nd Division at Mehamdiya and Pelusium, and by the 52nd Division at Romani railhead and Bir-el-Maler, south-west of it.

Sand cart as used in Sinai and Palestine.

The majority of the wounded were in the Australian and New Zealand Mounted Division. Its A.D.M.S., Colonel R. M. Downes, had four mounted field ambulances with him, the New Zealand, and 1st, 2nd and 3rd Australian Light Horse Field Ambulances. Just before the battle mobile sections of these field ambulances were organized with eight sand carts each, together with a number of camel cacolets and litters and sand sledges. These were to go out with the brigades and form advanced dressing stations. The tent divisions were immobile and remained in positions farther back as main dressing stations: that of the 1st Light Horse Field Ambulance at Romani, and that of the 2nd Light Horse Field Ambulance at one of the outposts; they evacuated through No. 3 Lowland Field Ambulance of the 52nd Division,

which acted as a casualty clearing station at railhead. The 3rd Light Horse Field Ambulance was on the hill near Pelusium, and the New Zealand Mounted Field Ambulance formed a main dressing station at Canterbury Post south of Pelusium.

On the 5th August the Light Horse Field Ambulances moved forward and collected several enemy wounded, establishing dressing stations west of Katia and at Bir Majid, 6 miles south of Katib Gannit. A Turkish field ambulance had been captured and was kept at Hod el Seifania, about 3 miles south-west of Katib Gannit, for the collection and

Camel litters as used during operations in Sinai.

treatment of the enemy wounded. The New Zealand Mounted Field Ambulance went forward to Bir el Nuss, east of Dueidar.

On the 6th August the 5th Mounted Brigade Field Ambulance of Yeomanry joined the Anzac Mounted Division. It opened a dressing station at Katia. Up till then the Yeomanry brigade wounded were brought to the Anzac Mounted Division or infantry field ambulances.

The camel ambulance transport of the field ambulances was formed into ambulance convoys, which came up and cleared the casualties to the 52nd or 42nd Division dressing stations on or near the railway.

The number of casualties received by the Anzac Mounted Division field ambulances during the battle and the pursuit up to the 13th August is shown in the following table.

Unit.	Wounded.	Sick.	Enemy Wounded.	Total.
1st Light Horse Field Ambulance	150	40	18	208
2nd ,, ,, ,, ,,	334	247	129	710
3rd ,, ,, ,, ,,	72	52	10	134
N.Z. Mounted ,, ,,	141	38	1	180
5th ,, Brigade ,, ,,	43	147	22	212
Total	740	524	180	1,444

The total British casualties from all units were 18 officers and 204 other ranks killed and 75 officers and 834 other ranks wounded.

There were 16 casualties in the Australian Medical Corps personnel, 3 officers were wounded, 1 dying of wounds; 12 other ranks were wounded and 1 killed.

The chief difficulty was the want of a portable stretcher for cavalry, resulting in the necessity of bringing sand carts and sledges close up to the firing line. The sledges were of great value for bringing in the seriously wounded, as were also the sand carts. Camel transport was found to be unsuitable in front of the main dressing stations, and was only used, as noted above, to form ambulance convoys between the main dressing stations and railhead. The sand carts and sledges were employed between the advanced dressing stations near the firing line and the main dressing stations.

The regimental organization in the Anzac Mounted Division broke down, as the regimental stretcher bearers in many instances were taken by the commanding officer from the control of the regimental medical officer and ordered into the firing line. The result was that wounded were carried back by untrained men, the medical officers were unable to form aid posts under cover, and sand carts had consequently to be pushed forward into the firing line. There was also considerable confusion due to messages reaching the dressing station from different sources asking for sand carts to be sent up to collect wounded, but when two or more sand carts went forward it was to find that all the messages related to one wounded man only. These indiscriminate messages were the result of the breakdown of the regimental organization and they thus caused much unnecessary work both to men and horses

During this battle no hospital trains were sent east of the Canal, and the casualties had to be evacuated on open trucks

by the light railway from Mehamdiya to Port Said, and from Romani railhead and Pelusium to Kantara. No. 31 General Hospital on the east bank of the Canal at Port Said received the wounded from Mehamdiya, and No. 26 Casualty Clearing Station those arriving at Kantara East. The wounded in them were evacuated by motor cars from the latter to hospital trains at Kantara West or to hospital barges on the Canal, and distributed to hospitals in Egypt, chiefly to the Australian Stationary Hospital in the Canal Company's school at Ismailia and to No. 24 Stationary Hospital at Moascar.

After the battle the Desert Column, chiefly composed of mounted troops, held an advanced line from Bir-el-Abd, 15 miles east of Katia, southwards to Homossia. The infantry returned to the Romani–Mehamdiya positions.

On the 16th and 17th September a reconnaissance in force was carried out by the Desert Column against the enemy camp at El Mazar, about 25 miles east of Bir-el-Abd; the casualties were slight.

After this no important operations were carried out by the Eastern Force until the end of 1916, but reconnaissance in the Sinai Peninsula continued to be made by cavalry and the Bikanir Camel Corps, which reconnoitred for 65 miles east of Ismailia on the 13th to 17th October. The railway was pushed on to Bir-es-Salmana, 4 miles east of Bir-el-Abd. By the 26th November 1916 it had reached El Mazar. Reconnaissance was then made to within 3 miles of El Arish. The enemy withdrew from El Arish without fighting and that town was occupied by the British forces on the 21st December 1916.

The chief difficulty of the advance to El Arish was the water supply. The pipe-line did not reach Romani till the 17th November 1916 and water had to be carried forward in tank trucks by the railway to fill improvised storage tanks at all posts where there was no local water supply. Consequently before the advance to El Arish water had to be accumulated at the railhead. After El Arish had been occupied supplies were sent there by sea.

On the 7th December the Desert Column came under the command of Lieut.-General Sir P. Chetwode, who, after the occupation of El Arish, pursued the enemy in the direction of Magdhaba and El Auja, the former some 20 miles south-east of El Arish, and the latter about 25 miles due east of Magdhaba. An action was fought at Magdhaba on the 23rd December 1916 and the post was captured with a loss

of 12 officers and 134 other ranks killed and wounded. 1,282 of the enemy were taken prisoners. A permanent and well-equipped hospital was found in Magdhaba.

The enemy was now in an entrenched position in front of and around Rafa, and operations were undertaken by the Desert Column on the night of the 8th/9th January 1917 to capture it. After considerable resistance, Rafa was occupied before 11 a.m. on the 9th January. Fighting was continued and the enemy finally driven out of the Sinai Peninsula. The number of wounded prisoners captured was 1,600; the British losses were 71 killed and 415 wounded and 1 missing.

The railway line was then pushed out along the coast, and reached El Arish at the end of January and Rafa in the middle of March 1917.

During the period between the battle of Romani and the occupation of Rafa several changes took place in the organization of the medical services and their administration. The D.M.S. moved to Cairo from Ismailia with the G.H.Q. of the Egyptian Command on the 25th September 1916, and the forces composing the Canal Defences and in the Sinai Peninsula were formed into an Eastern Force under the command of Lieut.-General Sir C. Dobell. The advanced guard of this force, composed of mounted troops and an infantry division, formed the Desert Column. The Egypt L. of C. was absorbed into G.H.Q., and Colonel Sexton, who had been its D.D.M.S., was appointed D D.M.S. of the Eastern Force with headquarters at Ismailia. Major Bagshawe was appointed A.D.M.S. on his staff. He had under his administrative medical control the Canal Sections, each with a D.D.M.S. or A.D.M.S., and the D.D.M.S. of the Desert Column. He had also direct administrative control over certain hospitals and other medical units in all sections of the Canal, and also in the Province of Sharquia. The A.D.M.S. for Egyptian Hospitals was also under his administrative control.

When the line advanced the three sections of the Canal were divided into a Northern and Southern Section; the Northern Section became the line of communication under the Eastern Force from Kantara to railhead.

In this way there appears to have been more than one D.D.M.S. under the administrative control of the D.D.M.S. of the Eastern Force.

There was also apparently, partly under the D.D.M.S., Eastern Force, and partly under the D.M.S. at G.H.Q., the D.D.M.S., Indian Troops, who had control of the Indian

medical units, no matter where they were placed, and who was more especially engaged in directing the evacuation of Indians from Egypt to India.

Colonel C. J. Macdonald, who had been D.D.M.S. of No. 3 Section of the Canal, was appointed D.D.M.S. of the Desert Column, with Major Lelean as his A.D.M.S. Colonel Macdonald had had considerable experience of warfare in France, and at once commenced to organize the medical services of the Column. He introduced systematic and methodical arrangements for the work of the medical services in connexion with specific operations. For this purpose the G.O.C. of the Column, Sir P. Chetwode, kept him fully informed of his plans in advance. On the 9th October 1916 he held a conference with the A.Ds.M.S. of the Anzac Mounted Division, 52nd Division and 42nd Division, which then formed the Desert Column. Their methods had been neither definite nor uniform, and there was a tendency to employ horse and camel transport too far forward, in some cases almost up to the aid posts. Colonel Macdonald consequently arranged that advanced dressing stations should be at a distance of from 500 to 2,000 yards, according to the nature of the ground, from the aid posts, sufficiently near, that is to say, for the R.A.M.C. stretcher bearers to carry wounded from the aid posts to the advanced dressing stations, and that there should be an animal transport rendezvous farther back from which the transport could move forward to the advanced dressing stations when circumstances permitted. The number of R.A.M.C. stretcher bearers was six squads for a brigade, but this was considered insufficient, and the D.D.M.S. asked for double that number. Advanced and main dressing stations were to be formed by the mobile sections of the field ambulances, and ambulance convoys were to operate between the dressing stations and railhead, which would never be more than 15 miles distant. At railhead a reception hospital would be formed by the immobile sections of the field ambulances, for accommodation and treatment of cases pending evacuation by train. In other words, these immobile sections were to act as casualty clearing stations.

Colonel Macdonald considered it best to retain the immobile sections of field ambulances at railhead, where they could supplement the work of any casualty clearing station that might be established there, and at the same time be ready to move on camel transport farther forward when necessary. The casualty clearing stations were being moved by rail and had therefore to remain on the railway line.

By the beginning of December four casualty clearing stations were placed along the line, No. 24 at Bir-el-Abd, No. 26 at El Mazar, and Nos. 53 and 54 at railhead. The last two were kept packed ready to move. The accommodation in the two casualty clearing stations that were open was for 800, obviously inadequate for a force then numbering some 50,000. Consequently two stationary hospitals were demanded, one for Kantara and the other for Romani. No. 24 Stationary Hospital was then moved, in November, from Moascar to Kantara East, and No. 2 (Australian) Stationary Hospital from Port Said to Mehamdiya instead of to Romani, with the accommodation in each increased to 800 beds.

No hospital trains crossed to the east of the Canal until December, when No. 6 and an emergency train were ready, the latter being replaced by No. 7 Train on the 14th December.

The medical situation in the Desert Column, therefore, before the advance to and occupation of El Arish was as follows :—

At Railhead	..	The immobile sections of divisional field ambulances, with accommodation for 700 casualties.
At El Abd	..	No. 24 Clearing Casualty Station open for 400, Nos. 53 and 54 Casualty Clearing Stations parked with equipment for 200 each.
At El Mazar	..	No. 26 Casualty Clearing Station open for 400.
At Mehamdiya	..	No. 2 (Australian) Stationary Hospital for 800 beds.
At Kantara East		No. 24 Stationary Hospital for 800 beds.

The total accommodation was, therefore, for 3,500. It was less than the number of anticipated casualties, and everything depended on the means of rapid evacuation to Kantara and Egypt.

Two hospital trains, Nos. 6 and 7, and equipment for improvising an emergency train were available. Evacuation by the Mehamdiya–Port Said route did not prove of much use. Mehamdiya had been selected as a hospital centre in order to divert evacuation to that route and avoid the more direct route to Kantara, as the latter was likely to be congested with traffic. The line, however, from Romani to Mehamdiya was constantly being blocked by sand drifts, and this interfered with its being used as the regular line of evacuation.

Evacuation by sea was considered, but it was found impossible to make use of hospital ships from any point on the coast-line of Sinai.

Extra personnel for loading trains and for work at the casualty clearing stations was obtained from bearer sections of the Egyptian Labour Corps. These sections were organized in July 1916, and trained under the A.D.M.S., Egyptian

Hospitals, and the commandant of the Corps. They formed a reserve of bearers, who proved to be excellent workers and invaluable during the succeeding battles.

No. 8 Base Depôt of Medical Stores was moved to Kantara.

Changes were effected in order to define the responsibility for the medical services. When No. 3 Section of the Canal became the Northern Section, its area extending from Kantara to Port Said and along the Sinai railway to El Arish, the zone in front of El Arish came under the Desert Column command. The headquarters of the Northern Section was then at El Arish, and the section was administered medically by a D.A.D.M.S. (Captain J. H. Wood) under the D.D.M.S. of the Eastern Force. His duties were to organize the evacuation of the sick and wounded along the line and supervise the sanitation of the town and camps. These arrangements held good until after the Second Battle of Gaza in April 1917.

For the operations against Magdhaba in December 1916, after the occupation of El Arish, medical units were improvised to accompany the Imperial Camel Corps Brigade. A mounted mobile section was formed from the 1/1st Welsh Field Ambulance of the 53rd Division. The personnel was mounted on camels, carrying 48 spare cacolets, and 9 sand carts were allotted to the field ambulance. A second camel corps ambulance was improvised on the same lines on the 20th December. Each camel corps company had in addition a pair of cacolets and a medical orderly.* The ordinary ambulance transport of a field ambulance mobile section at the time consisted of 9 sand carts, 38 cacolets and 10 litters.

In the Magdhaba action there were 131 wounded, of whom 30 were serious cases, in the Anzac Mounted Division. In addition, 64 enemy wounded, 15 serious, were brought in. The railhead was at El Mazar, where No. 26 C.C.S. was open and where No. 54 C.C.S. had also come up from El Abd, together with the immobile sections of the field ambulances. Railhead was then some 16 miles across the desert, and in order to avoid this journey the D.D.M.S. was anxious to bring the wounded to El Arish and send them back by the supply ships. The D.M.S., G.H.Q., however, issued an order that no seriously sick or wounded should be sent back in these ships. The

* The Scottish Horse Field Ambulance replaced the ambulance improvised from the 1/1st Welsh Field Ambulance on the 9th January 1917. It had been sent to Jeddah in August 1916, and had returned to Egypt without disembarking. Its transport consisted of 18 camel cacolets and 30 litters; it had no sand carts or sledges.

slight cases, however, were embarked and sent to No. 31 General Hospital at Port Said. The serious cases were treated in field ambulances at El Arish until they were fit to be moved to railhead by camel ambulance convoy. Fifty bedsteads were sent up by sea to El Arish for them.

For the operations against Rafa, which followed the Magdhaba affair a fortnight later, the orders issued by the D.D.M.S. were for mobile sections of the field ambulances of the Anzac Mounted Division to form a dressing station for the whole force at Sheikh Zowaiid, half-way between El Arish and Rafa. The dressing station was enlarged by the addition of four large Indian pattern tents and an operating tent. The mobile section of the 1/1st Welsh Field Ambulance, then attached to the Imperial Camel Corps, was put in charge of the dressing station. The immobile sections of the 1st Light Horse, and 1st and 2nd Lowland Field Ambulances were grouped at El Arish as reception stations, to which the sections at Sheikh Zowaiid would evacuate the wounded.

The Anzac Mounted Division field ambulances had been reorganized. The transport allotted to each field ambulance became 10 pairs of litters, 15 pairs of cacolets, 12 sand carts, 12 cycle stretchers, and 6 sledges, capable of carrying a total of 92 patients at one time. The cycle stretchers and sledges took one patient each lying, the sand carts two ; so that there was transport for 62 lying. All orderlies were mounted, so that those in charge of sand carts should not be left behind when wounded were sent back rapidly in the event of a retirement.

In the operations against Rafa on the 9th January the general scheme for the collection and evacuation of the wounded worked well. This was the first occasion in which the scheme had been put to test in battle, although a practice test had been previously carried out by Colonel Macdonald on the 14th December. The number of wounded collected was approximately 450 British and 50 Turkish. All the former were in the Anzac Mounted Division. Fifty-seven sand carts with 5 officers and 100 men having been sent up to Sheikh Zowaiid to supplement these with the mobile sections, there were thus sufficient sand carts for all the lying cases ; 345 of them were brought back to El Arish by the 11th January and evacuated to railhead and thence by hospital train.

After the capture of Rafa, the railway was pushed on rapidly to El Arish, which, at the end of January 1917, became railhead. No. 26 C.C.S. was brought up to it from El Mazar, and the

D.D.M.S. asked for a Red Cross Depôt to be formed there as soon as possible. The 42nd Division was now transferred to the base to embark for France and was replaced by the 54th Division. The 52nd, 53rd and 54th Divisions were thus in the front area for the operations against Gaza in March and April.

For these operations the headquarters of the Eastern Force was transferred from Ismailia to El Arish on 20th February and to Rafa on 23rd March. The Desert Column headquarters was at Sheikh Zowaiid, which then became the advanced base for an advance against Gaza. Mounted patrols had entered Khan Yunus on the road to Gaza on the 28th February, and the Turkish forces then withdrew towards Beersheba and were disposed between it and Gaza, with their centre at Tel-es-Sheria.

The Desert Column was, in March 1917, reconstituted at Sheikh Zowaiid to consist of the Imperial Mounted Division and the Anzac Mounted Division, less one brigade each, the 53rd Division and light armoured car batteries. The other divisions in the front line were the 52nd and 54th under the direct command of the Eastern Force. Preparations were then made for an attack on Gaza.

On the 25th March the Desert Column was ordered to concentrate at Deir-el-Belah, about 10 miles from Gaza and west of the Wadi Ghuzzee, the 54th Division at In Seirat on a ridge east of Deir-el-Belah, and the 52nd Division about Khan Yunus half-way between Deir-el-Belah and Rafa. The Imperial Camel Corps was covering the right flank at Abasan-el-Kebir. General Sir C. Dobell moved his headquarters to Rafa on the 20th March, and Sir A. Murray his G.H.Q. from Cairo to El Arish.

On the 26th March 1917 the first Battle of Gaza was fought. The cavalry divisions and Camel Corps successively surrounded the town on the north, east and south in the morning. The 53rd Division advanced across the Wadi Ghuzzee, but the other divisions did not come into action. Night fell before Gaza could be taken, and want of water and increasing enemy reinforcements determined the withdrawal of the British to their positions west of the Wadi Ghuzzee.

On the following day the Turks counter-attacked, and on 28th March the Eastern Force withdrew to a defensive line at Deir-el-Belah, the area being occupied in sections by the 54th, 52nd and 53rd Divisions covering the advance of the railway line, which was then reaching Khan Yunus.

Preparations were then made for a second attack on Gaza. Deir-el-Belah became railhead and headquarters of the Eastern

Force on 5th April. The chief problem was still that of water, and arrangements were made for pumping the water, brought up to El Belah by railway, over the In Seirat Ridge to tanks in the Wadi Ghuzzee.

The Second Battle of Gaza was fought on the 17th to 19th April 1917. The 74th Division, a new division formed from dismounted Yeomanry brigades which, together with the 75th Division, was formed in Egypt some two months previously, had reinforced the front line, and was placed in general reserve at In Seirat. The 54th and 52nd Divisions were to seize the Sheikh Abbas ridge south of Gaza and the 53rd the coast area between the road and the sea. The Desert Column, now consisting of the two mounted divisions and the Imperial Camel Corps, was on the right flank. Italian and French detachments had joined Sir A. Murray's forces, and Tanks were also employed.

The battle of 17th April was successful in so far that the Sheikh Abbas position was taken and consolidated, but the troops did not succeed in capturing the town either then or on the following days. The casualties were heavy, about 7,000 being killed or wounded in these operations against Gaza.

Previous to the more detailed medical arrangements for the attack on Gaza, El Arish had become the chief centre for the reception and evacuation of sick and wounded, and the most important station on the Sinai railway. No. 2 (Australian) Stationary Hospital had been ordered to move up from Mehamdiya on the 27th February 1917, and opened at El Arish on 10th March. Its place at Mehamdiya was taken by No. 36 Stationary Hospital from Suez. No. 26 C.C.S. was brought to El Arish from El Mazar early in March. No. 5 Advanced Depôt Medical Stores, which had been at El Abd in February, was also sent to El Arish. The large railhead camps successively at Romani, El Abd and El Mazar had shrunk into insignificance as railhead advanced to El Arish and beyond ; but railway guard and other details were left at them with a medical officer, two or three orderlies and small detention hospitals under canvas. Similar medical arrangements were made for the local details at camps in advance of El Arish and Ra'a. A hospital siding was constructed at El Arish for the stationary hospital and the casualty clearing station. Nos. 6 and 7 Hospital Trains were on the line, and the general arrangement for evacuation was for No. 6 Train to run from railhead to El Arish, unload its patients there, and for No. 7 Train to take them on the following day to Kantara or Mehamdiya. The

trains were garaged at El Arish. In the journey to El Arish from the front, and from El Arish to Kantara, sick were picked up at stations along the line. Only serious cases went down by the hospital trains. The slighter cases were accommodated in the trucks of the supply trains which were provided with mattresses and pillows and tarpaulin covers. At Kantara there was a fleet of twenty-five motor ambulance cars which met the trains and took the patients to No. 24 Stationary Hospital, about half a mile distant from the station, and evacuated them eventually across the Canal to the Egyptian hospital trains at Kantara West Station for final distribution. From Mehamdiya the light railway took them to No. 31 General Hospital at Port Said. In addition to these means of evacuation, two hospital barges, "Niagara" and "Indiana," based on Kantara and capable of taking 50 lying and 200 sitting cases, were employed to take the more seriously injured from No. 24 Stationary Hospital to Port Said. The journey could be made in three hours.

In February 1917, No. 24 C.C.S. left the Sinai line with the 42nd Division for France, taking with it the tents and equipment of No. 53 C.C.S. Nos. 53 and 54 C.C.Ss. were then ordered to be in readiness to move up to railhead. No. 54 arrived at Rafa on the 24th March, and No. 53 on the following day from Sheikh Zowaiid, where it had moved from El Abd on 12th March. A prisoners of war hospital was also being installed at Rafa at that time. After No. 54 C.C.S. had arrived at Rafa, which was railhead at the time of the First Battle of Gaza, preparations were made to move it to Khan Yunus by road on the morning of the 25th March, and 500 camels were assembled for the purpose. The casualty clearing station was to be ready to pitch its tents at Khan Yunus on the morning of the 26th March but not before, and all casualties from the front were to be evacuated to it. The tent divisions or immobile sections of the field ambulances of the 52nd Division were ordered to open near No. 54 C.C.S. at Khan Yunus and supplement its work. The tent subdivisions of "A" section of the field ambulances of all divisions were to be brought to Rafa and held in reserve. "A" section of No. 121 Indian field ambulance and No. 4 Egyptian Hospital for Egyptian labour and transport corps were also at Rafa, the former having been sent up for the sick and wounded of an Indian brigade. The Anzac field laboratory was brought to Rafa in view of the contingency of infectious diseases being prevalent amongst enemy prisoners. By these arrangements

the D.D.M.S. of the Desert Column hoped to have sufficient accommodation for the casualties at railhead, provided evacuation by the trains was continuous.

A general scheme of reception and evacuation centres was thus prepared at Khan Yunus, Rafa, El Arish, and Kantara or Mehamdiya, with road evacuation from the front to Khan Yunus, and by the construction train from Khan Yunus to Rafa. For road transport, the main Rafa–Gaza caravan track was passable for motor traffic in parts. Sites for the dressing stations were selected on it west of the Wadi Ghuzzee, where the mobile sections of the field ambulances of the 53rd, 52nd and 54th Divisions, and of the Anzac and Imperial Mounted Divisions were to be placed more or less in proximity to one another, with some in reserve to move forward into Gaza in the event of its being captured.

The D.D.M.S., Desert Column, had 20 Ford ambulance cars at his disposal at the beginning of March, and had distributed 3 to each of the two mounted divisions, and 6 to the 53rd Division, retaining 8 as reserve. Twenty-five more cars were asked for, but only 21 were available to form a convoy at the time of the battle. The only suitable road across the Wadi Ghuzzee was about a mile south of the dressing stations, the main road being found rough and impracticable. Consequently the cars were re-distributed. Ten were detailed to work from the east of the Wadi to the dressing stations and 11 from the dressing stations to the casualty clearing station at Khan Yunus. Fifteen light motor transport cars were obtained from the headquarters of the Column, each capable of taking five wounded sitting, and these proved a valuable supplement to the convoy. The 52nd and 54th Divisions were directly under the Eastern Force Command, and their field ambulances had their own horsed and camel transport, which was to be used in the event of the motor ambulance cars with the Desert Column D.D.M.S. not being available for evacuating from them. This transport consisted of cacolets, litters and sand carts, bicycle stretchers and sand sledges. Camel ambulance convoys had also been formed to work between dressing stations and the casualty clearing station.

The number of wounded in the First Battle of Gaza was approximately 2,480, of whom 30 per cent. were severely and 70 per cent. slightly wounded, as shown in the table.

Evacuation from the dressing stations was slow, as many as 1,232 remaining in them on the morning of 28th March. All available cars and transport were ordered up ; and 100 cacolet

Number of Wounded in the First Battle of Gaza.

Division or Unit.	Severely wounded.		Slightly wounded.		Total.	
	Off.	O.R.	Off.	O.R.	Off.	O.R.
53rd Division	18	292	79	1,169	97	1,461
54th Division	23	408	11	414	34	822
Anzac Mounted Division ..	3	5	1	21	4	26
Imperial Mounted Division ..	—	3	1	8	1	11
Imperial Camel Corps Brigade	—	11	1	3	1	14
School of Instruction Machine Gun Company.	—	—	—	2	—	2
Light Armoured Cars	—	—	—	1	—	1
Totals	44	719	93	1,618	137	2,337

camels, 14 sand carts and 15 Ford transport cars were sent from the 52nd Division, and 30 cacolet camels and 12 sand carts from the 54th Division. With this additional transport the field ambulances were practically clear by the evening. It was intended to bring 215 remaining in the dressing stations to the coast, off which two supply ships were lying, but the difficulties of getting them on board were too great, and they were cleared the following day by road and train.

No. 53 C.C.S. and immobile sections of field ambulances were rapidly prepared at Rafa on 28th March and sanitary section personnel were used as bearers.

On the 30th March there were 1,091 cases in No. 53 C.C.S. at 10 o'clock in the morning, and orders were issued then to pitch all possible tents to expand No. 26 C.C.S. at El Arish, and to obtain the assistance of medical officers and personnel from sections of field ambulances ; also to arrange for food at El Abd for the light cases on empty ration trains returning between El Arish and Kantara, and as many as possible to be sent to No. 24 Stationary Hospital at Kantara.

All cases passed through No. 54 C.C.S. Serious cases were operated on there, where an advanced operating centre was employed for the first time in these operations. The lighter cases passed through to No. 53 C.C.S. at Rafa.

The number of wounded remaining forward at El Arish in the evening of 1st April was 1,093, and also 700 sick. The front was practically cleared by the 4th April.

By the 26th March railhead had reached Khan Yunus, and No. 6 Train then ran between it and Rafa. It carried only

100 lying cases, but could make two or three trips daily between Khan Yunus and Rafa. No. 7 Train ran from Rafa to Kantara and could take 300 lying down cases on stretchers, making one trip daily. There was also a train made up of covered goods trucks fitted with Brechot apparatus. The slighter cases were evacuated in the supply trucks. Some of the wounded were also brought from Khan Yunus to Rafa by road in supply wagons. The following table shows the method by which the casualty clearing station at Khan Yunus was cleared :—

Evacuation of Sick and Wounded from the First Battle of Gaza

Date.	Class of Train.	No. evacuated	From	To
27th March..	Construction Train ..	161	Khan Yunus	Rafa
	No. 7 Train	97	Rafa	Kantara
	Ambulance Convoy .. (1/2nd Lowland F.A.)	148	Khan Yunus	Rafa
28th March..	Ambulance Convoy .. (as above).	150	Khan Yunus	Rafa
	G.S. Wagons	160	,, ,,	,,
	Limber Wagons ..	46	,, ,,	,,
	Construction Train ..	119	,, ,,	,,
	Brechot Train	300	,, ,,	,,
	No. 6 Train	168	,, ,,	El Arish
29th March..	No. 7 Train	300	Khan Yunus	Kantara
	Brechot Train	256	,, ,,	Rafa
	Brechot Train	203	Rafa	El Arish
	No. 6 Train	183	Khan Yunus	Rafa
	No. 6 Train	144	,, ,,	El Arish
	Supply Train	44	,, ,,	Rafa
30th March..	Brechot Train .. .. (2 journeys).	521	Khan Yunus	Rafa
	No. 6 Train	144	,, ,,	Kantara
	Construction Train ..	191	,, ,,	Rafa
31st March ..	No. 7 Train	350	Khan Yunus and Rafa	Kantara
	Brechot Train .. .. (2 journeys)	521	Rafa	El Arish
	Supply Train	473	El Arish	Kantara
	No. 6 Train	235	,,	,,
1st April ..	Brechot Train	519	Rafa	El Arish
	No. 7 Train	415	El Arish	Mehemdiya
	Supply Train	305	,,	Kantara
2nd April ..	Brechot Train	500	Rafa	El Arish
	No. 6 Train	333	El Arish	Kantara
3rd April ..	No. 6 Train	98	Rafa	El Arish
	Brechot Train	174	,,	,,

The effect of this battle was to bring into prominence the necessity of completing the ambulance transport of field ambulances and the formation of suitable ambulance convoys. There was no properly constituted motor ambulance convoy and the formation of camel ambulance convoys was necessary. The two hospital trains were also insufficient for work on the railway line, which had now extended to Deir-el-Belah.

In preparation for the second attack on Gaza, therefore, the roads were reconnoitred to find out which, if any, were suitable for motor ambulance cars, a number of which were being sent up from Kantara by rail. Twenty-one cars for the 54th Division field ambulances arrived on the 10th April and those for the other divisions and mounted divisions began to come up gradually, the exact number, however, with the Eastern Force on 17th April when the Second Battle of Gaza commenced is uncertain. Sand carts were employed in place of the heavy horsed ambulance wagons, for which the number of mules was insufficient.

The sites for the dressing stations of the 52nd, 53rd and 54th Divisions were similar to those during the First Battle. They were shelled on the 14th April by the enemy and had to be moved somewhat farther back. The immobile sections were established at Deir-el-Belah, and No. 54 C.C.S. and No. 53 C.C.S. were brought up there.

For the operations, which the two mounted divisions were to carry out south of the main attack, special preparations were made. The Anzac Division was to concentrate at Shellal, and the Imperial Mounted Division at Tel-el-Jemmi. There was a good road from these places to Abasan-el-Kebir, and from there to Deir-el-Belah. A direct road for camels led over the hill from Deir-el-Belah to Tel-el-Jemmi. It was marked by signposts. Dressing stations were to be formed at Shellal and El Jemmi. The motor ambulance cars were to assemble at Abasan-el-Kebir under the direction of the Desert Column A.D.M.S. (Major Lelean). The camel ambulance transport was assembled at Deir-el-Belah waiting orders to move. Sand carts, sledges and cycle stretchers were to be used in front of the dressing stations, working across the Wadi Ghuzzee eastwards. For this purpose the Anzac Mounted Division had 33 sand carts, 15 sledges and 5 cycle stretchers, and the Imperial Mounted Division, 36 sand carts and 6 cycle stretchers. Thirty-six motor ambulance cars were available to form a convoy by the 16th April. They were sent to Abasan. The camel ambulance transport consisted of 78

cacolet camels from the Anzac and 54 from the Imperial Mounted Divisions, together with 18 and 14 camels respectively to carry supplies of food for the medical services and the sick and wounded.

The operations commenced on the 17th April. On the 18th April orders issued to the Desert Column involved the collection of the wounded of both mounted divisions at Tel-el-Jemmi, instead of there and Shellal. The dressing stations were consequently concentrated at Tel-el-Jemmi and the motor ambulance cars brought up close to them. The road across the Wadi was made suitable for the cars, and several were sent to work between Tel-el-Jemmi and the advanced dressing stations. An attempt was then made to send motor cars along the direct route from Tel-el-Jemmi to Deir-el-Belah over the In Seirat ridge, a distance of 5 or 6 miles only, but there is no definite record of this road having been used. Owing to cutting up of the original road an alternative route was made.

The casualties received into the mounted divisions main dressing stations at Tel-el-Jemmi during the four days from midnight of the 16th/17th to midnight 20th/21st April were 5 officers and 107 other ranks of the Anzac Mounted Division, and 33 officers and 382 other ranks of the Imperial Mounted Division, a total of 527. The majority were cleared from Tel-el-Jemmi on the 19th and 20th by the camel convoy. Others were sent back in the ambulance cars, light transport cars, and general service wagons, and Tel-el-Jemmi was clear of wounded by the evening of the 20th April. The majority of the wounds were slight.

In addition to the casualties in the mounted divisions, a total of 408 wounded from the Imperial Camel Corps Brigade and 54th Division was brought to the dressing stations at Tel-el-Jemmi, so that these dressing stations dealt with 935 wounded.

The 52nd, 53rd and 54th Divisions operating in front of Gaza had motor ambulance cars with their field ambulances. Many of them were able to work across the Wadi Ghuzzee. There were only a few casualties during the 17th April, but during the main attack on the 19th April the casualties were heavy.

The total number of wounded admitted to the casualty clearing station at railhead up to midnight of the 20th/21st April was 104 officers and 3,014 other ranks ; 73 officers and 2,155 other ranks had by that time been evacuated down the line

by No. 6 Hospital Train and the Brechot train, and in supply trucks. The hospital trains ran as before, No. 6 to El Arish and No. 7 from El Arish to Kantara or Mehamdiya.

The work of evacuating the sick and wounded back to Egypt was carried on steadily till the end of the month, when both railhead and El Arish were practically clear.

The attack on Gaza was not immediately resumed, and a period of trench warfare ensued which lasted to the end of October 1917. During this period the Eastern Force held a line in front of Gaza on the Wadi Ghuzzee from Tel-el-Jemmi to El Ajlin on the coast, with cavalry patrols working to the south and south-east. Immediately after the Second Battle of Gaza the Canal Zone Northern Section was reorganized as the Palestine L. of C. ; Sir P. Chetwode took over the command of the Eastern Force, and Major-General Sir H. G. Chauvel that of the Desert Column. In June General Sir E. Allenby succeeded Sir A. Murray in command of the Egyptian Expeditionary Force.

The Egyptian Expeditionary Force was then reorganized into a Desert Mounted Corps of three mounted divisions, and two Corps, the XXth and XXIst, with three divisions each at first. The Eastern Force ceased to exist on the 12th August 1917, and the three Corps came directly under G.H.Q. Colonel C. J. Macdonald was transferred as D.D.M.S. to the XXIst Corps, Colonel Downes from the Anzac Mounted Division became D.D.M.S. of the Desert Mounted Corps, and Colonel Luce, who had been A.D.M.S. of the Imperial Mounted Division and for a short time, previous to this reorganization, had replaced Colonel Sexton as D.D.M.S. of the Eastern Force, became D.D.M.S. of the XXth Corps. Surg.-General Maher remained as D.M.S. at Cairo G.H.Q., but on being invalided in September was succeeded temporarily by his A.D.M.S Colonel Keble, with the acting rank of Surg.-General.

The Egyptian Expeditionary Force settled down in the Wadi Ghuzzee and neighbourhood during this period of reorganization, and preparations were made for a further invasion of Palestine in the autumn. The medical services were chiefly concerned in dealing with the sick and with sanitary measures for the prevention of disease. The problem of water supply was of special interest. It was solved as recorded in the volumes on the Hygiene of the War by the exploration of water-bearing areas under the direction of Dr. Hume, of the Egyptian Geological Survey.

The medical services on the Palestine L. of C. were placed under the control of an A.D.M.S., Colonel Sexton, who had been previously D.D.M.S. of the Eastern Force.

The casualty clearing stations were placed under the A.D.M.S., Palestine L. of C. Nos. 53 and 54 had been renumbered Nos. 65 and 66, the former at Rafa and the latter at Deir-el-Belah. No. 26 remained at El Arish, and two new casualty clearing stations, Nos. 74 and 75, were brought to Rafa.

The new stationary hospitals, Nos. 43, 44 and 45, were also placed on the Palestine L. of C.; Nos. 43 and 45 at Masaid, about 3 miles west of El Arish, and No. 44 at Kantara East. Nos. 24 and 36, already on the line, remained in their previous positions at Kantara East and Mehamdiya respectively.

Four advanced depôts, No. 5 at El Arish, No. 7 at Deir-el-Belah, and Nos. 4 and 6, parked at Rafa, were also on the L. of C., and sanitary sections were employed in various areas.

This was then the general medical situation when the preparations were being made for the invasion of Palestine.

Health of the Troops.

After the evacuation of Gallipoli a large proportion of the troops, mainly Australian, were employed in the Canal Zone. In addition there were also many Indian troops. It is not surprising therefore that the two main diseases noted were dysentery and malaria. The dysentery was a relic of Gallipoli, and at first was diagnosed almost universally as being amœbic in type owing to the fact that in the protozoological examinations *Entamœba coli* had been mistaken for *Entamœba histolytica*. As soon, however, as the laboratories were staffed with men trained in tropical medicine the true nature of the disease was shown to be bacillary, and this continued to be the prevailing type throughout the campaign, although there was a certain proportion of true amœbic dysentery amongst Indian troops brought by them to the country.

The distribution of troops in trenches along the canal, and the difficulty in preventing access of flies to the latrines, helped to keep dysentery fairly common during the year 1916, but, as soon as the defences along the canal were given up and the system of incineration was substituted for the deep-trench latrine, conditions improved. This was also aided greatly by the fact that when the troops began to move forward into the Sinai desert and were camping on ground that had not been soiled the chance of infection diminished.

Nevertheless, dysentery continued to occur up to the time when Palestine was entered. At one time it was thought that the hospital trains coming down the line were infecting the track with dysenteric fæcal matter; such infection, however, was highly improbable owing to the action of the fierce sun and the drifting sand. But orders were issued to replace the flush water closet on the trains by latrine boxes, which were cleared at regular stopping places by the sanitary sections, a procedure which was continued until the end of the campaign.

A certain amount of malaria was introduced by the troops from India, but in addition, at various places on the canal such as Kubri and Shallufa, north of Suez, Serapeum, Ismailia and El Ferdan, on the west bank at Kantara, and at Tina and El Kap, on Lake Menzalah, near Port Said, a considerable number of cases of primary malaria occurred. All these were of the benign type, quite different from the malignant subtertian that occurred subsequently in Palestine. Large sums of money were expended in oiling and draining, the Egyptian Government Health Department making a grant in aid of £10,000 for drainage purposes at Kantara. Cases of malaria also occurred on the Wadi Ghuzzee and at Sheikh Nuran before the break through into Palestine.

While the troops were on the Canal strict injunctions were given that the men should not bathe in or drink the water from the Sweet Water Canal, as it was known that this was heavily infected with bilharzia. Nevertheless, certain regiments, particularly a battalion stationed at Kubri, had some hundreds of men infected. The troops generally soon grasped the danger when it was explained to them. There was never, so far as can be gathered, any evidence of infection from the pipe-line throughout the three years it was in use. A few cases of bilharziasis occurred in Palestine, but these were stated to have been acquired from the Palestine water itself.

Septic sores, analagous to the Veld sore of the South African War, were probably the most fruitful source of wastage in the Sinai operations. It was found that the slightest scratch quickly developed into an intractable ulcer which, in spite of all treatment, would last for months, and nothing seemed to do any good except to send the patient down the line to Egypt, when, with fresh food and vegetables and ordinary simple dressing, the sores quickly healed. The usual explanation offered was that the condition was a food deficiency disease aggravated by sand and heat, and the dietary was accordingly

augmented by vegetables as fresh as possible; beer was issued at one time as it was stated to improve the condition in some cases. The disease became much more marked when the troops were in trenches around Gaza, and it was accompanied by an extensive outbreak of diphtheria which became particularly prevalent in certain sectors of the line. This diphtheria was not of a dangerous type, but it was most elusive in its distribution, since, owing to its mildness, there was a great number of unsuspected carriers. It was whilst working on these that Captain C. M. Craig, of No. 2 Military Laboratory, stationed at Deir-el-Belah, commenced to investigate the bacteriology of the prevalent septic sores. There he found, to his considerable surprise, that many of them gave a pure Klebs Loeffler bacillus in culture, and came to the conclusion that a large percentage of the cases of septic sore was diphtheritic. This was confirmed by laboratory methods, culture, and inoculation of guinea-pigs, and clinically it was found that by injecting anti-diphtheritic serum many of the cases cleared up rapidly. This was a most valuable discovery. It came, however, just before the final successful attack on Gaza, and afterwards, when the troops moved into Palestine, septic sores practically ceased.

Sand-fly fever was epidemic at one time in the coastal sector around Gaza. It was local in its distribution. Certain trenches close to the coast and near the village of Deir-el-Belah were dreaded by the troops because whenever a fresh battalion came into them it was attacked immediately. Most of the cases were mild, but quite a considerable proportion of those attacked developed jaundice and had to be invalided to the base.

Scabies was extremely prevalent at one time in the desert, the scarcity of water and the great heat aggravating the condition.

There was very little venereal disease in the army whilst in the Sinai Desert, for there was no opportunity of acquiring infection.

Except when on forced marches or in action over waterless and sandy areas there were few cases of sunstroke and heat apoplexy. Many of the troops were Australian and seemed not to feel the heat nearly so much as the Egyptian Labour Corps men.

Until the army penetrated into Palestine and came into contact with native villages there were practically no cases of the enteric group of fevers. A few cases of typhus occurred amongst men coming in contact with labour corps.

There was a small outbreak of cholera at one time after the battle of Romani. Cholera also occurred amongst the Arab troops at Akaba. There was constant anxiety lest the Turkish prisoners of war, several thousands of whom were camped at Ma'adi, 5 miles from Cairo on the Helouan Road, would introduce cholera into Egypt, but they had been so well inoculated with prophylactic vaccines that no case occurred. At all times the strongest precautions were taken to prevent men of the labour corps returning to their homes in Egpyt before they had undergone a period of quarantine in a quarantine camp east of the Suez Canal.

Amongst the Egyptian Labour Corps, dysentery, typhoid fever, skin diseases, tuberculosis, bilharziasis and relapsing fever were the more prevalent diseases. Pediculosis was extremely widespread, and delousing on a very extensive scale had to be carried out continuously.

In spite, however, of all anticipations to the contrary, the health of the troops during the operations in the Sinai Peninsula was on the whole remarkably good. The provision of an ample supply of sterilized water along a waterless desert from Egypt to Deir-el-Belah by means of a 12-in. pipe was one of the most important causes to which this happy result must be attributed. Other equally important factors were the provision of the means of disinfestation by the railway disinfecting vans, and the inoculation of the troops and Egyptian Labour Corps against cholera. Relapsing fever amongst the Labour Corps was stopped by delousing, and prophylactic inoculations at once checked the threats of cholera.

The advance across the Sinai desert, therefore, may well be described as a triumph of the engineering and medical services over disease.

CHAPTER XXII.

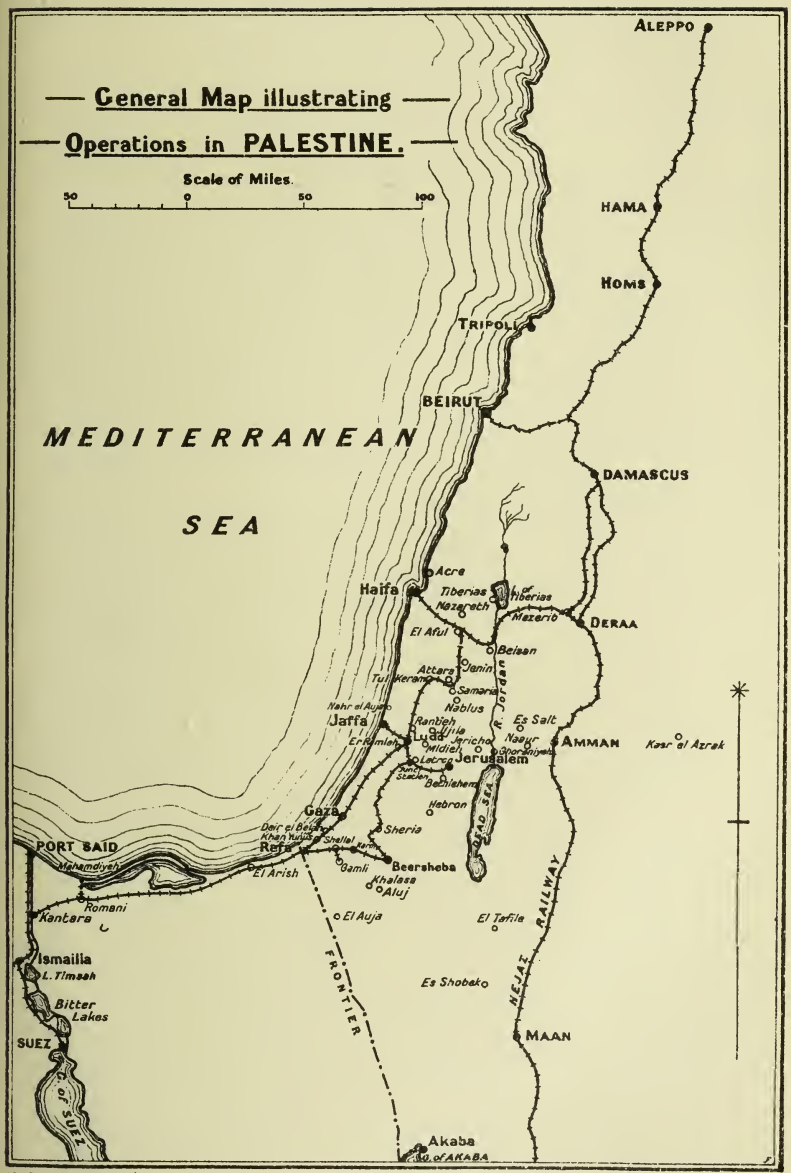
THE MEDICAL SERVICES DURING THE OPERATIONS IN PALESTINE.

WHEN General Sir E. Allenby took over command of the Egyptian Expeditionary Force on 28th June 1917, preparations were made to capture Gaza, not by direct attack, but by a wide turning movement by the right in the direction of Beersheba. The operations were consequently to be carried out by mounted troops. A broad gauge railway line had been constructed from Rafa to Shellal on the Wadi Ghuzzee, and was extended after the capture of Beersheba to Karm on the Beersheba–Khan Yunus road, and the railway had also been advanced towards Gaza as far as Deir-el-Belah. The chief problem affecting the force operating against Beersheba was that of water ; 30,000 camels would be required to keep the troops supplied for one week when operating 15 to 20 miles from railhead.

Khalasa and Asluj, some 15 miles south-west of Beersheba and some 25 to 30 miles south-east of Khan Yunus on the coastline, were selected as the area of concentration for the Desert Mounted Corps. The attack, which was timed to take place on the 31st October 1917, was to be carried out by the Desert Mounted Corps and the XXth Corps against Beersheba. Four days previously, however, the enemy took the initiative and launched an attack in the direction of Karm. Yeomanry outposts were cut up, but 53rd Division troops, coming up in support, checked his advance.

During the night of the 30th/31st October the cavalry made a march of 25 to 35 miles and occupied the hills about 5 miles east of Beersheba. The 60th and 74th Divisions of the XXth Corps, after a night march, surprised the enemy, and after several hours' severe fighting captured the town and 2,000 prisoners and 13 guns.

On the 2nd November a frontal attack on Gaza was made by the XXIst Corps in order to draw the enemy that way and so help the cavalry and XXth Corps operations from Beersheba against the enemy's centre at Sheria. During this attack there were many casualties.



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On the 3rd to 6th November the advance was made against the Sheria defences from the hills north of Beersheba by the Desert Mounted and XXth Corps. Sheria station was captured by the 74th and 10th Divisions on the 6th November with only slight casualties, but the 53rd Division, that was engaged in the hills, suffered severely in repelling a counter-attack on the British right.

The final attack on Gaza by the XXIst Corps then took place, and the town was captured on the 7th November. During the following seven days there was a general pursuit of the enemy and actions were fought with his rearguard, the objective being what was known as the Junction Station on the light railway between Jaffa and Jerusalem. Ramleh and Ludd, which were on the same line 10 to 15 miles farther north, were occupied on the 15th November and Jaffa the following day.

During these operations the right of the British force had advanced 60 miles and the left 40 miles in fifteen days, and completely defeated an enemy force of nine divisions and a cavalry division. The Desert Mounted Corps and the 52nd Division of the XXIst Corps were the formations that took part in this rapid advance to Ramleh, Ludd and Jaffa. Practically the whole of the mobile transport of the army, including motor ambulance cars, was placed at the disposal of the pursuing force.

Between the 15th November and 9th December 1917 operations were carried on to isolate Jerusalem, which surrendered on the latter date.

From 31st October to 9th December 1917, 12,000 of the enemy became prisoners of war and large quantities of war material were captured.

The situation then in Palestine was as follows. The enemy had five divisions on the hills north of Jaffa and Ramleh overlooking the coastal plain, and six divisions farther east towards Jerusalem. The British XXIst Corps was entrenched opposite the divisions north of Jaffa and Ramleh on a line Nahr-el-Auja, 3 miles north of Jaffa, through a point 5 miles north of Ludd to Midieh. The XXth Corps was in position on its right from the Jerusalem–Jericho road on a line crossing the Jerusalem–Nablus road about 4 miles north of Jerusalem.

Preparations were then made to attack the enemy across the Nahr-el-Auja. The roads were at the time deep in mud from heavy rains and impracticable for motor or camel transport ; but the operations for an advance were commenced on the 20th December. A crossing was effected over the

Nahr-el-Auja by the 52nd Division during the night of the 20th/21st, and the territory beyond was secured by surprise without a shot being fired. An advance was then made to a new line of positions 8 miles north of Jaffa.

On the XXth Corps front the enemy attacked the British positions on the 26/27th December, and the 60th and 53rd Divisions were engaged along the whole front. The 74th and 10th Divisions counter-attacked, and on the 28th December the XXth Corps advanced to positions farther north. The casualties were under 1,000, and 750 prisoners were taken.

There were then no active operations until 19th February 1918, when a column composed of the Anzac Mounted Division, less one brigade, and the 60th and 53rd Divisions of the XXth Corps advanced to the Jordan Valley. The country over which the advance took place was mountainous, intersected by wadis running west and east in valleys with precipitous sides. Numerous tributaries broke up the mountain ridges into a tumbled mass of hills, and the descent to the Jordan Valley was very steep. Through this country the 60th and 53rd Divisions advanced, and on the 20th February the former reached a line 4 miles west of the cliff overlooking Jericho, while the mounted troops on its right by dusk entered the Jordan Valley. On the 21st February Jericho was occupied by a mounted brigade. A line was then taken up on the hills above Jericho, while mounted troops patrolled the Jordan Valley, the main body of the Anzac Mounted Division returning to its previous position at Bethlehem.

Between the 8th and 12th March the XXth Corps, with the 60th Division on the extreme right, the 53rd on the right centre, the 74th astride the Nablus road on the left centre and the 10th Division on the extreme left, continued fighting in the hills north of Jerusalem and captured Tel Asur after much opposition. The advance was one of 3,000 to 7,000 yards on a 12-mile front. The difficulties were great, as the troops had to climb up the terraced sides of the valleys, men being hoisted up, under fire, by their comrades.

On the XXIst Corps front the Ballut ridge, which was honeycombed with caves, was captured by the 75th Division on 12th March without much difficulty. Gurkhas of an Indian infantry brigade, attached to the 75th Division, were employed in this operation. The 54th Division also advanced on the left of the 75th Division and gained its objectives.

The next series of operations undertaken in Palestine were intended to serve as a demonstration east of the Jordan Valley

and secure the destruction of the Hedjaz railway line and tunnel at Amman, 30 miles east of Jericho. The Allied Arab Force under the Emir Feisul was based on Akaba at the time and had advanced to El Tafile, 15 miles south-east of the Dead Sea, in January 1918; but in March following it was obliged to withdraw under pressure of the Turks to Shobek. The country between the Jordan Valley and Amman was the plateau of Moab, 3,500 ft. above the valley. There was a considerable town, Es Salt, on the western edge of the plateau, about 18 miles from Jericho, with which it was connected by a metalled road and several mountain tracks.

A British Force, composed of the 60th Division, the Anzac Mounted Division, the Imperial Camel Brigade, a mountain artillery brigade, a heavy battery and light armoured car brigade, commenced the advance towards Es Salt on the 21st/22nd March 1918, hampered by heavy rains which fell on the preceding days and on the 27th, 28th and 29th of the month. Consequently the movement of the force was much delayed. The Jordan was crossed at various places by bridges thrown over it, and by swimming. The 60th Division took Es Salt on the 25th March. The Cavalry and Camel Brigade reached Nadur, finding much difficulty in descending the slippery slopes on the east. On the 29th and 30th Amman was attacked by a brigade of the 60th Division and the mounted troops, and the village entered, but owing to strong enemy reinforcements they were ordered to return and the force re-crossed the Jordan on the 2nd April after inflicting considerable damage to the railway line north and south of Amman.

On the 11th April the Turks attacked the bridgehead in the Jordan Valley at Ghoraniyeh but were repulsed. They were attacked in their turn by the Desert Mounted Corps and 60th Division between the 30th April and 2nd May, but the British force failed to capture the positions held by the enemy between the Jordan and Es Salt, and it was withdrawn west of the Jordan by the evening of the 4th May.

While these operations in Trans-Jordania were taking place in April, the expeditionary force in Palestine was being re organized. The 52nd and 74th Divisions left for France and were replaced by the Meerut Division and Lahore Division from Mesopotamia, the former in April and the latter in June. Both these divisions had previously served in France. Nine Yeomanry regiments, 10 infantry battalions, 5½ siege batteries and 5 machine gun companies were also withdrawn to proceed to France. They were replaced by Indian cavalry from France

and by Indian battalions from India. Fourteen more British infantry battalions left in May, but only two Indian battalions replaced them. In July ten more British battalions left and were replaced by ten Indian battalions.

During this period of reorganization of the formations of Sir E. Allenby's force, several raids and small advances were made. The XXth Corps advanced its positions astride the Nablus road in March. On the 9th to 11th April the XXIst Corps advanced 3 miles in the coastal area on a 12-mile front. On the 8th June a further advance along the coast was made. On the 14th July the enemy attacked on the Jordan front but was repulsed with heavy losses. On the 13th and 27th July raids were made by Indian troops, and on the 12th August a raid on a large scale was carried out.

The result of all these operations was to drive the enemy back to a line 22 miles from Jerusalem; the Hedjaz communications were broken, and 331 officers and 6,088 other ranks were taken prisoners. The weather was cold and wet during the early part of the period. The hardships were many, and the difficulties of maintaining supplies in consequence of the nature of the country great. The Egyptian Labour Corps and Camel Transport Corps were invaluable in overcoming these difficulties.

Preparations were now made for the final defeat of the Turkish armies in Palestine. The chief consideration was to carry out the advance before the rainy season, which commenced at the end of October. Consequently the preparations were made with a view to launching the attack on the 19th September 1918. The army in Palestine then consisted of the 4th and 5th Cavalry Divisions,* the Australian Mounted Division,† and the Anzac Mounted Division, the 10th, 53rd, 54th, 60th, 75th, Lahore and Meerut Divisions, an Indian infantry brigade, and a force of some 6,000 French troops of the Palestine and Syria detachment. The whole force contained 12,000 sabres, 57,000 rifles and 540 guns.

* These divisions were partly composed of the Indian Cavalry regiments of the 4th and 5th Indian Cavalry Divisions, which had been broken up in France. Six of these regiments joined the 1st Mounted Division, and four the 2nd Mounted Division. Yeomanry regiments and Indian Imperial service regiments completed the formation of the 1st and 2nd Mounted Divisions, which were then designated in Palestine the 4th and 5th Cavalry Divisions.

† The Imperial Camel Corps brigade of Australian and New Zealand Companies had been organized as Cavalry in June 1918. It had originally British, as well as Australian and New Zealand Companies, and the Hongkong and Singapore Mountain Battery. The Scottish Horse was also with it as a machine gun squadron. In August its companies became the 5th Australian Light Horse Brigade and joined the Australian Mounted Division.

The general plan was to create a gap along the coast for the cavalry to pass through, sweep northwards and cut off the enemy's possible line of retreat through Jenin, Beisan, Nazareth and Tiberias. Divisions were consequently diverted from the Jordan Valley and the Jerusalem front so that five divisions—the 54th, Lahore, 75th, Meerut and 60th—were concentrated for the attack on that portion of the enemy line which extended from the coast to Jiljulieh. Behind this line there was a series of enemy defences along the railway line from Tul Keram.

The XXIst Corps under Lieut.-General Sir E. Bulfin was to carry out the main attack. After creating a gap for the cavalry between the railway and the sea it was to swing to the right in a north-easterly direction, drive the enemy through the hills to Samaria and Attara, and force him to retire along the Jenin road, where he would find the way blocked by the cavalry at El Afule in the plain of Esdraelon.

The Cavalry, under Lieut.-General Sir H. Chauvel, immediately the gap was formed, was to push on into the plain and seize El Afule, sending a detachment on to Nazareth.

The XXth Corps, under Lieut.-General Sir P. Chetwode, was to advance on the Nablus road on the night previous to the attack of the XXIst Corps, and continue the advance with the 53rd and 10th Divisions on the evening of the 19th September; the object being to induce the belief that the advance was to be made east of the Jordan. A force, under Sir E. Chaytor, composed of the Anzac Mounted Division and two brigades of infantry, was to block the Jordan Valley exits and go on to Amman and cut the line of retreat there.

The Emir Feisul's Army, which was co-operating in Trans-Jordania with British armoured cars and a French mountain battery, had assembled at Kasr-el-Azrak, 50 miles east of Amman, and had attacked the railway line north and south of Deraa on the 16th and 17th September.

These planned operations were executed with brilliant success, and ended in an armistice on the 31st October. They were conducted in five successive phases. The first phase was the main attack from the 19th to the 21st September, during which the XXIst Corps reached Samaria, and the XXth Corps Nablus and the hills north-east of it, while the cavalry on the 20th September reached El Afule, Nazareth, Jenin, Beisan and the Jordan. The 4th Cavalry Division, which advanced to Beisan, had thus covered 80 miles in thirty-four hours. During this phase the Eighth Turkish Army was

overwhelmed and the Seventh was in retreat through the hills of Samaria.

In the second phase, 22nd and 23rd September, the enemy was driven into the hands of the cavalry by the XXth and XXIst Corps, and the Turkish Eighth and Seventh Armies were captured with their guns and transport. Haifa and Acre were taken and Tiberias and the country to the south and west of the Lake of Tiberias occupied.

The third phase consisted of operations by a force under Colonel Chaytor against Es Salt and Amman, resulting in the capture of Es Salt on 23rd September, Amman on the 25th, and the surrender of 5,000 Turks forming the garrison of Maan on the 28th September.

The fourth phase was a series of operations by the Desert Mounted Corps in Trans-Jordania between the 26th and 30th September, leading to the capture of Damascus on 1st October. These operations resulted in the capture of the Turkish Fourth Army and in an advance by the XXIst Corps from Haifa to Beirut.

The final phase was an advance into Syria and the occupation of Homs on 15th October by cavalry, Tripoli by a brigade of the Meerut Division, and Aleppo by a brigade of the 5th Cavalry Division on 25th October. An armistice was then signed on 31st October.

As the result of these operations between 19th September and 26th October 1918, Sir E. Allenby's troops advanced 300 miles from their original line to Aleppo; 75,000 prisoners, including 200 officers and 3,500 other ranks of the German and Austrian armies, 360 guns and an immense amount of material were captured.

An Italian detachment (Distaccamento Italiano di Palestina), which had been formed on 1st July 1917, took part in the operations in the battles of Beersheba and the advance north of Gaza. It was present at the fall of Jerusalem, forming a Guard of Honour at the official entry of Sir E. Allenby on 11th December 1917, and afterwards performed important guard duties at Jerusalem, Junction Station, Jaffa and other centres.

A French detachment (Détachement Français de Palestine et Syrie) of cavalry and infantry took part in the final operations, the cavalry with the Desert Mounted Corps, and the infantry with the XXIst Corps.

The medical situation during these operations may best be considered in three sections: first, the period of the battles of

Beersheba and Gaza and the subsequent pursuit to Jaffa and Jerusalem, or the period from the commencement of the operations in October 1917 to the end of the year; second, the period of small advances and the operations in Trans-Jordania during 1918 up to the final battle; and third, the period commencing with the final battle on the 19th September and ending with the armistice on 31st October 1918.

The Medical Services during the Battles of Beersheba and Gaza and subsequent Pursuit.

Just previous to the operations commencing on 31st October 1917 changes had taken place in the administration of the medical services of the Egyptian Expeditionary Force. Surg.-General Maher, who had succeeded Surg.-General Bedford in April 1916, had remained as D.M.S. of the Force until September 1917, when he was invalided to England. He was succeeded by his A.D.M.S., Colonel Keble, as a temporary measure. Colonel Keble, however, was not replaced until January 1918, so that he was in administrative medical control during the whole of the first period. His staff consisted of an A.D.M.S., Major Bagshawe, an A.D.M.S. for Sanitation, Lieut.-Colonel Fowler, and a D.A.D.M.S., Capt. Bird. They concerned themselves mainly during the operations in directing the medical services in advance of the Palestine L. of C., and in fact took up a position similar to that of the staff of a D.M.S. of an Army in France, although from time to time many questions arose in connexion with medical affairs in Egypt, necessitating visits of inspection.

The Palestine L. of C. was administered by an A.D.M.S., an appointment which was taken over from Colonel Sexton on 5th September 1917 by Lieut.-Colonel Abraham, who had been previously with No. 24 Stationary Hospital at Kantara. His headquarters were at Kantara. He was assisted by a D.A.D.M.S. for Sanitation, Captain J. H. Wood.

The XXth Corps had as its D.D.M.S. Colonel R. Luce. The Corps was composed of the 53rd, 60th, 74th and 10th Divisions during the operations of this period.

The XXIst Corps consisted of the 52nd, 54th and 75th Divisions, with a brigade of Indian battalions attached to the 75th. The D.D.M.S. of the Corps was Colonel Macdonald, who had been D.D.M.S. of the Desert Column during the advance through the Sinai Peninsula.

The Desert Mounted Column consisted of the Australian Mounted Division, the Anzac Mounted Division, and the

Yeomanry Division. Colonel Downes was its D.D.M.S. The Imperial Camel Brigade also operated with the Desert Mounted Corps.

The medical preparations for the battles of Beersheba and Gaza and the pursuit to the Jerusalem–Jaffa line had been planned beforehand in minute detail.

There were two railheads, one at Imara, for the Desert Mounted Corps and XXth Corps, which was advancing on Beersheba and Sheria on the right, and the other at Deir-el-Belah, for the XXIst Corps, which was opposite Gaza in the Wadi Ghuzzee on the left.

It was anticipated that the bulk of the casualties would occur during the operations of the Desert Mounted Corps and XXth Corps. Consequently steps were taken to make Imara, on the railway line 3 miles from Karm, to which the line was extended after the attack had been launched, the chief evacuating centre. Three casualty clearing stations, Nos. 35, 65 (formerly No. 53) and 75 were to be brought up from Rafa. Sites were pegged out and a railway siding constructed on the night of the 30th/31st October. An Egyptian hospital for prisoners of war was also sent up, and No. 6 Advanced Depôt of Medical Stores was kept parked at Rafa ready to move with the casualty clearing stations. The immobile sections of the field ambulances of the XXth Corps divisions were also at Imara.

It was important to avoid disclosing the fact that Imara was being prepared as a large hospital centre. Consequently the three casualty clearing stations had to pitch their tents and instal 3,000 beds during the night of the 30th/31st October. This they accomplished in twelve hours, just one hour before the wounded began to arrive. Tent pitching and preparation of beds had been thoroughly practised beforehand at Rafa, and 600 of the Egyptian Labour Corps were attached temporarily to each casualty clearing station to assist in getting it ready.

At Deir-el-Belah there were already two casualty clearing stations, No. 66 (formerly No. 54) and No. 74, and a Prisoners of War hospital. Each casualty clearing station was reinforced by 100 men of the R.A.M.C.*

Colonel Keble placed his A.D.M.S. of the Palestine L. of C. (Lieut.-Colonel Abraham) at Imara to direct evacuation of wounded from there, and the A.D.M.S. (Sanitation), Lieut.-Colonel Fowler, for similar duty at Deir-el-Belah.

* Most of these were previously attached to units in the fighting line for water duties.

The D.A.D.M.S. of the Palestine L. of C. (Captain J. H. Wood) remained at El Arish to regulate the evacuation from there; while the O.C. No. 24 Stationary Hospital directed evacuation to the west bank of the Canal and hospitals in Egypt.

The number of hospital trains was four, but truck trains were organized for the walking wounded.

For road evacuation the field ambulances had still to depend on sand carts and camel ambulance transport, but most of the divisions had been given their motor ambulance cars. No. 35 Motor Ambulance Convoy had also arrived at Imara from England. At Deir-el-Belah the D.D.M.S. of the XXIst Corps parked some of the divisional motor ambulance cars and twenty additional Ford cars which had been brought up from the base. Roads across the soft sand had been constructed for motor traffic by covering the sand with wire netting and working in manure on the top of the sand; or by placing the wire on matting. This form of road was specially necessary in the coastal sector in front of Gaza, between the main Gaza road and the sea. In addition to the ambulance transport every possible use was made of Decauville field railways, light railways, empty ammunition and supply lorries, and general service wagons for sitting and walking patients.

After Gaza fell on the 7th November and the enemy had been driven northwards beyond the Jaffa–Jerusalem line, the centres of evacuation shifted from Imara and Deir-el-Belah to Beit Hanun and the Junction Station. A narrow gauge railway ran from Jaffa through Ramleh and the Junction Station to Jerusalem. During the war the Turks had constructed branches from the Junction Station southwards to Beersheba in one direction and towards Gaza in another. At first immobile sections of field ambulances were strung out along the line from Beit Hanun to Julis and Junction Station, and from there westwards to Ramleh and Jaffa, eastwards to Enab, and eventually to Jerusalem. They acted as casualty clearing stations at the various points until relieved by casualty clearing stations of the L. of C. The Egyptian broad gauge line was pushed forward at a later stage through Beit Hanun and Yebna to Ramleh and Ludd, and from Shellal Junction through Karm to Beersheba. Casualty clearing stations were then moved up the line, No. 77 to Gaza on 20th November, No. 35 to Deir Sineid, 3 or 4 miles north of Beit Hanun, and No. 75 to Junction Station on 29th November. An Indian C.C.S. had also joined the force and was established with No. 77 C.C.S. at Gaza.

The main line of evacuation of sick and wounded from the front line was consequently through the Junction Station in the period immediately subsequent to the pursuit and up to the occupation of Jerusalem. The main road east and west from Junction Station was good in dry weather, and fairly passable at all times. But the road south from it to Julis, Deir Sineid and Beit Hanun, was an impassable quagmire in rains. From the front line in the hills north of the Jaffa–Jerusalem road the valleys were without roads and ended in terraced gullies so that motor and wheeled transport was confined to the main roads, and these were liable to become impassable in wet weather. These conditions materially affected the arrangements for dealing with the sick and wounded. So long as the weather was dry the motor ambulance cars took sick and wounded to Junction Station and from there through Julis and Deir Sineid to Beit Hanun, Gaza, or Deir-el-Belah, whichever was the railhead. A train to carry 220 sitting cases in trucks and 24 lying in two passenger coaches, was also run on the narrow gauge railway between Junction Station and Beit Hanun from the 22nd November. But a period of heavy rains during the last week of November completely interrupted all methods of evacuation from Junction Station and beyond for several days, with the result that the medical units became acutely congested with sick and wounded. Fortunately those at Enab had good and ample accommodation in a monastery, a nunnery and a sanatorium. Similar interruption of evacuation by road and rail occurred in the last week of December owing to heavy storms and rain, and nursing sisters were sent to work in No. 66 C.C.S. in Jerusalem, where 1,500 patients were held up owing to this interruption of evacuation.*

For bringing the wounded from the positions in the hills to the main road, camel transport could be used to a certain extent, but the more serious cases had to be carried by hand, and for this purpose fifty men of the Egyptian Labour Corps were attached to each field ambulance as bearers.

A secondary line of evacuation was maintained after the fall of Gaza by the 53rd Division, which was advancing on Jerusalem from Beersheba through Hebron and Bethlehem. For its sick and wounded the original arrangements for evacuation to Karm and Imara were retained. The three immobile sections of its field ambulances were placed as a casualty

* The nursing sisters had been sent to Jerusalem to the field ambulances at first, until it was possible to bring up No. 66 C.C.S.

clearing station at Beersheba, to which sick and wounded were brought from the front in the divisional ambulance cars. From Beersheba to Karm evacuation was under the control of the D.M.S., who had twenty Ford cars available for the purpose. The detachment of No. 65 C.C.S. at Karm received the convoy on arrival and entrained the patients.

These were the general medical arrangements during this period of the operations in Palestine.

The Medical Services with the Desert Mounted Corps.—With regard to details of the medical arrangements within the formations there is little that is very definite in connexion with the Desert Mounted Corps beyond the movements of the immobile sections of the divisional field ambulances, which formed what were called divisional receiving stations. These moved forward in conformity with the movements of the divisions of the Corps.

During the opening phases of the battle the receiving stations of all three mounted divisions moved into Beersheba. As the mounted divisions then worked in a north-westerly direction to the line of the Junction Station–Ramleh–Jaffa, the receiving station of the Anzac Mounted Division moved on the 11th November to Bureir, on 13th to Yebna, and on 18th to Ramleh, that of the Imperial Mounted Division to Beit Hanun, Julis and Junction Station, and that of the Yeomanry to Ameidat, Beit Hanun and Julis on these successive dates. The Corps had sixty-six divisional motor ambulance cars, of which forty-eight were light Ford cars, and a workshop unit. There was, however, much difficulty in maintaining systematic evacuation by them to the receiving stations. The drivers frequently lost their way, and there was some confusion in the manner in which evacuation was regulated. Added to this, the means of communication between the D.D.M.S. of the Corps and his D.A.D.M.S., who was with battle headquarters, and between the latter and evacuating units or A.Ds.M.S. of divisions were inadequate for efficient control during the rapid advance. There appears to have been a tendency on the part of the D.D.M.S. and his D.A.D.M.S. to take initiative out of the hands of divisional A.Ds.M.S. On the other hand, the Corps D.D.M.S. was no doubt in the best position to control evacuation from the divisional main dressing stations to the receiving stations, but in this case the chief trouble was the difficulty of ascertaining where the main dressing stations were.

The Medical Services with the XXth Corps.—The XXth Corps which co-operated with the Desert Mounted Corps in the attack on Beersheba and Sheria on the 31st October and following days, had all its field ambulance immobile sections assembled at Imara with the three casualty clearing stations. These sections were amalgamated and formed one combined immobile section for each of the four divisions with the Corps. The D.D.M.S. of the Corps controlled evacuation from the main dressing stations to Imara. He was in telephonic communication with the divisions and had No. 35 M.A.C. placed at his disposal for temporary duty during the first three days of the battle.

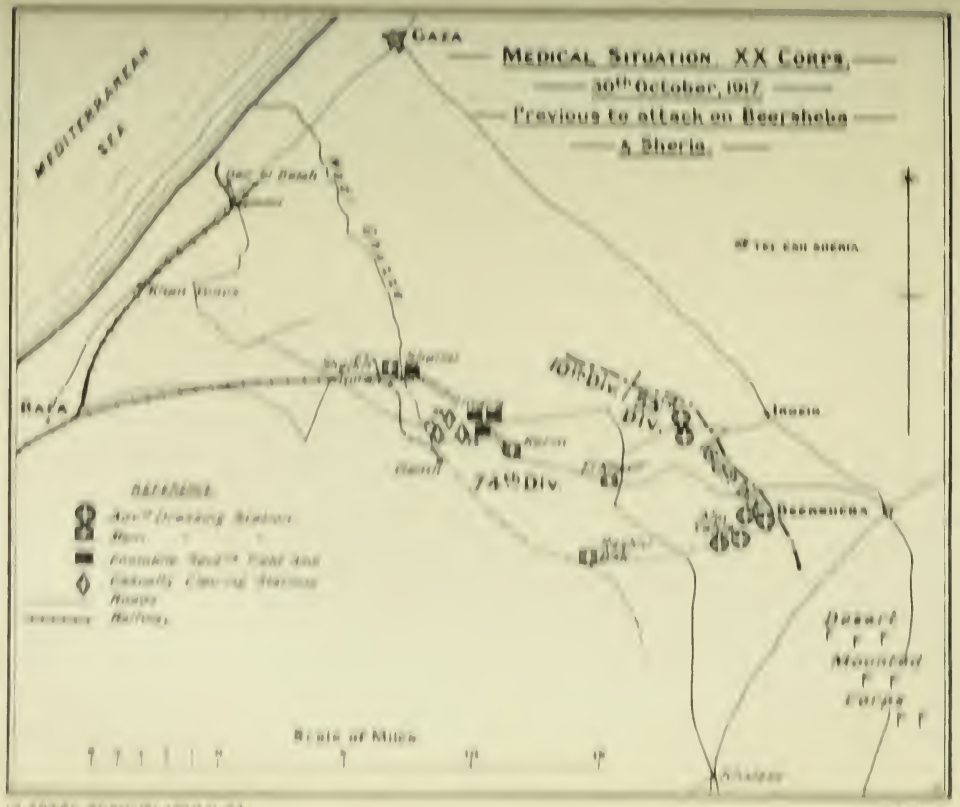
After Beersheba was occupied the combined immobile sections of the 60th and 74th Divisions were sent there. The 10th, 60th and 74th Divisions then retained only six of their ambulance cars each, the rest forming an ambulance park under the Corps D.D.M.S. The 53rd Division, however, retained its twenty-one ambulance cars, as it was detailed for independent operations on the Beersheba–Jerusalem road under G.H.Q.

No difficulty was experienced in evacuating the wounded from the divisions to Imara; but the 74th Division was at some distance from the Beersheba–Gaza road, and a combined immobile section was sent to the car rendezvous on the road to receive casualties from the division during the operations against Sheria on 6th November.

By the 4th November the road to Imara, which was over black cotton soil, had been badly broken up by the constant traffic, and many ambulance cars were damaged. Consequently the less seriously wounded were sent back from Beersheba to Karm by general service wagons and ammunition lorries. A detachment of No. 65 C.C.S. received them there and entrained them for Imara. Irgeig also became a main dressing station position for a combined immobile field ambulance section. The walking wounded were evacuated from it by ammunition lorries to Karm.

By the 9th November active operations by the XXth Corps for the time being ceased. The 60th Division was attached to the Desert Mounted Corps and the 74th and 10th Divisions came back to Karm to refit. No. 35 M.A.C. and ten Ford cars, borrowed from the XXIst Corps, were returned to that Corps, together with fifteen Ford cars from the 10th Division.

The number of casualties brought to Imara between 31st October and 9th November was 4,390 of whom 3,300 belonged to the XXth Corps; 403 Turkish wounded were also received.


Gaza
Medical Situation. XX Corps.
30th October, 1917.
Previous to attack on Beersheba
& Sheria.
Mediterranean Sea
Rafa
Khan Yunus
Deir el Balah
Wadi Ghazze
Sheria
Tel el Sheria
Asluj
Beersheba
74th Div.
Desert Mounted Corps
Scale of Miles

On the 22nd November the XXth Corps Headquarters moved up to Junction Station and on 28th November to Latron monastery; the 10th Division coming up at the same time from Deir-el-Belah to Junction Station. The D.D.M.S. of the XXth Corps was then placed in charge of the medical preparations for the advance on Jerusalem, which was to be made by the 60th and 74th Divisions which attacked and captured the enemy defences on the 8th/9th December, when Jerusalem fell. Junction Station became the main evacuating centre, organized as was Imara during the earlier period. The combined immobile field ambulance sections of the 10th Division were placed at Latron, and of the 60th and 74th Divisions in good buildings at Enab. Each of the three divisions retained six of their ambulance cars; the rest were pooled as a Corps Ambulance Park. No. 35 M.A.C. and cars of the XXIst Corps were to assist in evacuating from Enab to Junction Station. Altogether sixty-four cars were available. From Junction Station evacuation was by train, motor ambulance convoy and returning supply lorries. It was estimated that 1,000 could be moved daily by train and car and 600 by lorries. The 53rd Division, which had all its ambulance cars, continued to be based on Beersheba, and had its combined immobile sections at Beersheba and its main dressing station at Hebron.

As already stated, these arrangements for rapid clearing of the Corps front were much interfered with by heavy rains.

On Jerusalem being occupied, field ambulances of the 60th and 53rd Divisions were moved into the city, where advanced and main dressing stations were opened, but the combined immobile sections remained in their positions at Enab and Latron till the end of the year.

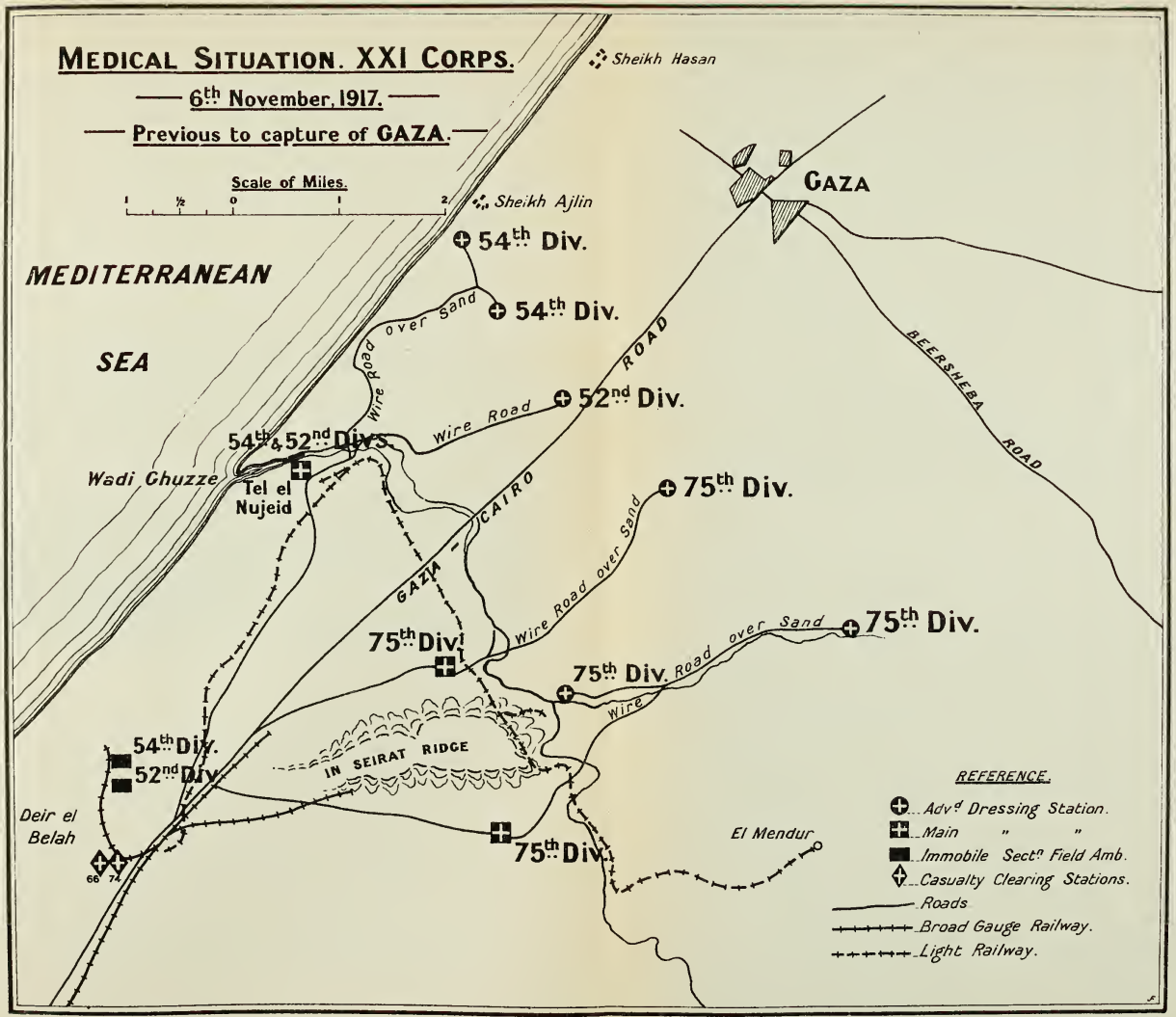
The Medical Services with the XXIst Corps.—The XXIst Corps medical arrangements have been recorded with great exactness and detail in the diaries of its D.D.M.S., Colonel Macdonald. The 54th Division with elements of the 52nd Division was to make the main attack on the enemy lines in front of Gaza between the Gaza–Cairo road and the sea. The 75th Division with an Indian brigade co-operated on the right between the road and El Mendur. The general scheme for the battle was to have a main dressing station for the coastal sector at Tel-el-Nujeid, in a sheltered and protected position behind a hill on the Deir-el-Belah side of the Wadi Ghuzzee and near its mouth. For the Mendur Sector two main dressing stations were formed also on the west of the Wadi Ghuzzee,

one north and the other south of the In Seirat ridge. Advanced dressing stations for both sectors were formed on the Gaza side of the Wadi. They were connected with the main dressing stations by wire roads over the sand. Roads, with wire where necessary, also led from the main dressing stations to the casualty clearing stations at Deir-el-Belah. A light railway had been constructed from Deir-el-Belah towards Tel-el-Nujeid and from there along the left bank of the Wadi to El Mendur, passing within easy distance of all three main dressing stations. The advanced dressing stations were east of the Wadi Ghuzzee in timber and corrugated iron dugouts

Wounded arriving at a casualty clearing station in Palestine, 1918.

capable of holding 150 wounded each. The distance from them to the main dressing stations was $3\frac{1}{2}$ miles, and from the main dressing stations to Deir-el-Belah 4 miles.

In both the coastal and Mendur sectors sand carts and camel transport were used for bringing the wounded to the main dressing stations, but for special cases light motor ambulance cars could be sent up to the advanced dressing stations whenever necessary. Subsidiary arrangements were also made to bring wounded in emergency to the main Gaza road through the Wadi by sand carts at night, load them on motor ambulance cars on the west side of the Wadi and bring them direct to Nos. 66 and 74 Casualty Clearing Stations at Deir-el-Belah. Between the main dressing stations and Deir-el-Belah the motor



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ambulance cars were used for stretcher cases and the light railway for the walking wounded. Four motor ambulance cars were stationed at the coast main dressing station and also at the main dressing station north of In Seirat, and eight at the main dressing station south of the ridge. Half of these cars were light cars. The D.D.M.S. had the remaining cars parked to be used under his direction as required. Two motor cyclists were placed at the disposal of the A.D.M.S. of each division for inter-communication.

At Deir-el-Belah a detachment of one officer and seven other ranks with a sand cart was constantly on duty at the

No. 66 Casualty Clearing Station.

detraining siding of the light railway to receive the walking wounded as they came down and conduct them to the casualty clearing station. Two field ambulance immobile sections from the 52nd and 54th Divisions were also ordered to remain open at Deir-el-Belah for the reception of cholera or suspicious cholera cases.

The D.D.M.S. of the XXIst Corps, until Gaza was taken, remained at Corps Headquarters in Deir-el-Belah, while his D.A.D.M.S. supervised evacuation of wounded from Tel-el-Nujeid.

Before the battle the rest camp at El Arish was taken over by the Scottish Horse Field Ambulance, and organized as a unit for the retention and treatment of 2,000 slight

cases of wounds or sickness, and return them to duty without evacuation to the base hospitals.*

These medical preparations for the battle are shown on the sketch maps.

After Gaza was occupied it was intended to organize a line of evacuation by the main Gaza road, but some days elapsed before the road was fit for the motor ambulance cars. Consequently the XXIst Corps continued to evacuate the sick and wounded through dressing stations strung out along the coast route from Tel-el-Nujeid to Sheikh Ajlin and Sheikh Hasan until the 10th November when this route was closed, although casualties continued to be taken to Tel-el-Nujeid for several days afterwards through Gaza.

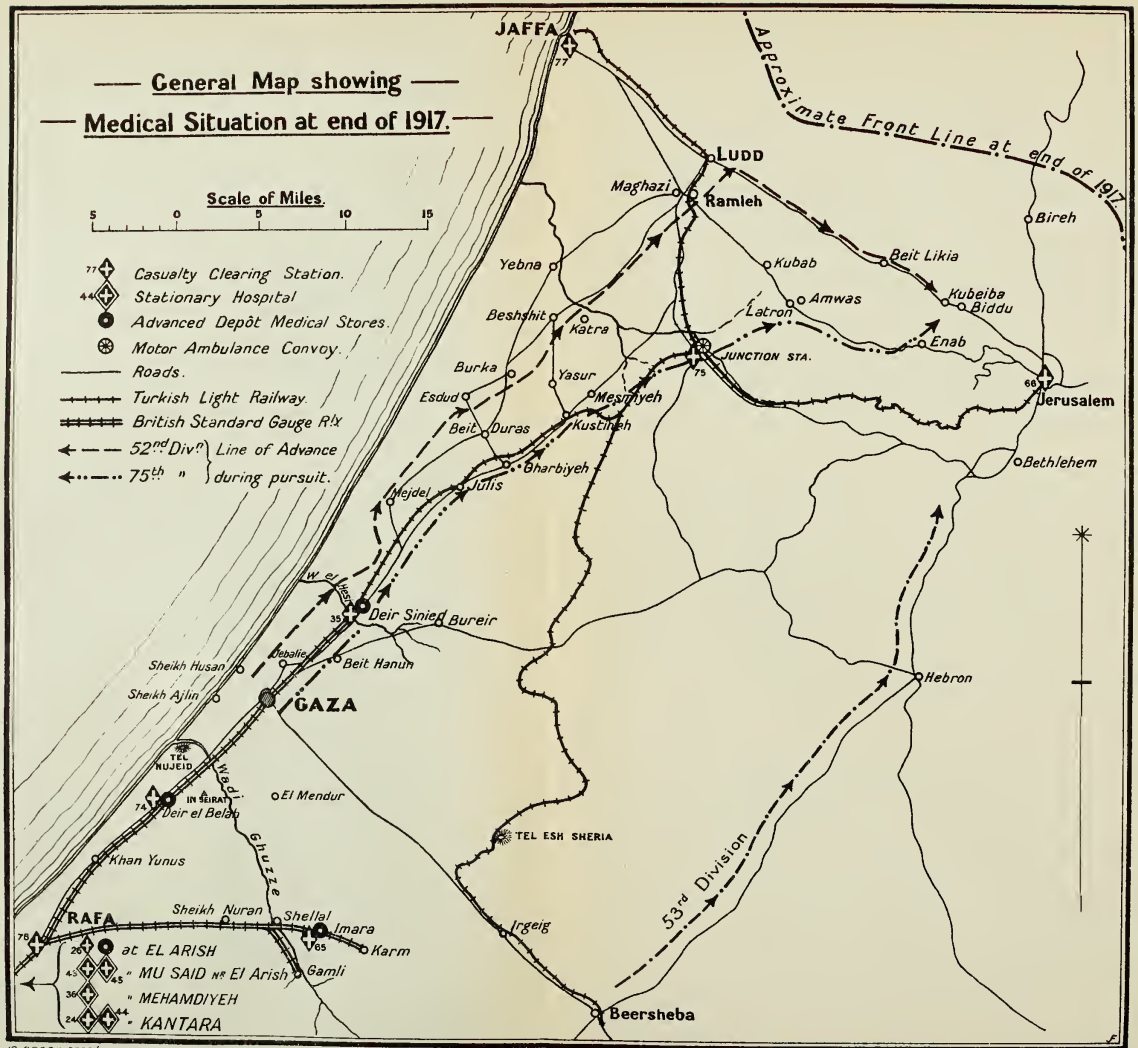
During the period 2nd to 12th November when Tel-el-Nujeid was thus receiving casualties, 2,837 British wounded and 122 Turkish wounded were admitted to the main dressing stations there. A very large number of the wounds (76·35 per cent.) was slight.

After occupying Gaza the XXIst Corps was engaged in the pursuit of the enemy to the Jaffa–Jerusalem line. The 52nd Division attacked the Turkish positions in the Wadi Hesi on 8th November. On the 10th November it was advancing along the Jaffa road, while the 75th Division was advancing along the Junction Station road. Beit Hanun and Deir Sineid then became road-head for evacuation by ambulance car. No. 35 M.A.C. and all available cars from the XXth Corps were placed at the disposal of the XXIst Corps D.D.M.S. for the purpose.

The 52nd Division continued its advance northwards by one road, and the 75th Division by another, in divergent directions.

The difficulties of a long line of evacuation over indifferent roads now began to be apparent, the more so as the two advancing divisions were proceeding along divergent roads with no cross communications. Fortunately the 54th Division remained for the moment in reserve just north of Gaza, and it was possible to use portions of its field ambulances as a temporary casualty clearing station, its ambulance transport assisting in the evacuation of lighter cases by easy stages, and its baggage transport bringing forward with all speed its immobile "A" tent subdivisions to a point between Beit Hanun and Deir Sineid. Evacuation was then carried out by

* Similar arrangements were subsequently made at Ludd by this field ambulance, previous to the final advance to Haifa.



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motor ambulance cars and returning motor lorries and supply wagons to the dressing station at Beit Hanun ; from there walking and light cases were transferred by camel convoy (100 camels) to a dressing station at Jebalieh ; from Jebalieh they were sent by camel (100 camels) or sand cart to Tel-el-Nujeid dressing station ; and from that point by light railway to the casualty clearing stations at Belah. More severe cases were sent by motor ambulance cars direct to the casualty clearing stations. All available passing transport returning to Belah was utilized. The distances of the various stages were, Esdud to Beit Hanun 16 miles, Gharbiyeh to Beit Hanun 14 miles, Beit Hanun to Belah 14 miles.

The 52nd Division attacked Burka on 12th November ; on 13th November the 75th Division attacked Kustineh and Yazur, and seized Mesmiyeh, while the 52nd Division attacked the line Yazur-Beschitt and took Katra. The main dressing station for the 75th Division was at Gharbiyeh, that of the 52nd Division 3 miles north of Mejdel, and at Esdud. On the next day the main dressing station of the 75th Division was at El Kustineh, and that of the 52nd Division at Esdud, with advanced dressing stations at Mesmiyeh and Beschitt respectively The 54th Division was then advancing along the Jaffa road.

The distance between the main dressing stations and the casualty clearing stations at Deir-el-Belah had now lengthened to 28 and 30 miles. The cars available for evacuation up to the evening of 13th November were 53 divisional cars and 17 cars of No. 35 M.A.C. On the evening of the 13th a reinforcement of 14 additional Ford cars and on the 14th, 18 additional cars of No. 35 M.A.C. arrived at Beit Hanun.

Evacuation was carried out as described above, utilizing returning motor lorries and Ford vans as much as possible. One group of ammunition lorries, working from Julis to Belah at this period, proved of great service.

By the 19th November the 75th Division had advanced beyond Junction Station, and was attacking Latron, while the 52nd Division had reached Ludd, and was advancing along the Roman road from that place towards Beit Likia, with the Jerusalem–Bireh road as objective. As soon as Junction Station was taken, the dressing station established there by the 75th Division was used as an intermediate casualty clearing station for the three divisions of the XXIst Corps, and the Deir Sineid–Jaffa road ceased to be used, the last evacuation direct from Yebna taking place on 18th November, after the 54th

Division had passed through. Evacuation was now by motor ambulance cars along the Jaffa–Jerusalem road via Latron to Junction Station from the 54th Division at Ramleh, the 52nd Division forming dressing stations successively at Ludd, Kubab, Amwas, and finally at El Enab, in accordance with the movements of the division among the hills parallel to the Jaffa–Jerusalem road.

Owing to the move forward of the 54th Division and the prospect of heavy fighting north of Jaffa, the whole of its field ambulances, less the immobile tent subdivisions which remained at Beit Hanun, moved forward from Beit Hanun and Jebalieh, and evacuation of light cases by camel and sand cart from Beit Hanun to Tel-el-Nujeid ceased after 17th November. Fortunately it was now possible to evacuate to the casualty clearing station at Deir-el-Belah by construction train from Gaza, for which purpose No. 146 Field Ambulance tent subdivision at Jemakia acted as an entraining unit until the arrival of a casualty clearing station at Gaza on 20th November.

The 75th Division tent subdivisions, British and Indian, reinforced by a detachment from the 52nd Division, continued to act as a temporary casualty clearing station at Junction Station, taking over all available accommodation, pending the arrival of a field ambulance of the XXth Corps. One of the "A" tent subdivisions was moved from Beit Hanun to Julis to assist the Desert Mounted Corps reception station there, and all available tents, medical stores, blankets and stretchers that could be spared from Beit Hanun were brought forward on the 19th and 20th to Junction Station by motor ambulance cars.

The difficulties of evacuation of sick and wounded after the advance to Jaffa were very great. Rain upset everything. Railways were washed out and road bridges were destroyed. The position at Junction Station was only saved at first by a forced march of No. 30 Field Ambulance of the 10th Division which was in reserve about Gaza or about to move up. No casualty clearing station could be brought beyond Gaza, and it was some weeks before one could reach Junction Station. The narrow gauge line, which at the time only advanced to Beit Hanun, some 4 miles from Gaza, was unreliable and was laid over a bad road.

From the 22nd to 25th November, the 52nd and 75th Divisions were engaged in operations in the hilly country north-west of Jerusalem, their objective being to cut the Jerusalem–Bireh

road north of the city. For these operations the monastery at El Enab was the main dressing station for both the 75th and 52nd Divisions, with advanced dressing stations at Kubeibe and Biddu. The distance from Junction Station to Enab was 15 miles over an indifferent road with a steep gradient from Latron onwards. The divisional cars worked forward from Junction Station. Continuous work over indifferent roads led to many breakdowns, and the average number available for duty during this period of the operations was thirty-two out of fifty-three, the incline from Latron to Enab particularly causing damage. On the 24th November 1917, the 75th Division dressing station at Enab had dealt with about 600 cases during the previous twenty-four hours; there were still somewhat under 300 remaining, and about 300 cases were still waiting at Kubeibe, 200 of them serious. Additional cars were then obtained, 12 from the 60th Division and 10 to complete establishment of the XXIst Corps divisions; 51 sand carts were also obtained from the 10th and 60th Divisions.

The difficulties of evacuation from the advanced dressing stations at Biddu and Kubeibe were considerable as the road was impassable for wheeled transport, and passable for camels only after the boulders had been removed. The less serious cases were brought down by camel or on mules, and the more serious were man-handled over the five miles from Kubeibe to Enab. Fortunately the accommodation at the former place was excellent. Some of the more serious cases were not removed for several days, remaining under the care of a surgical specialist. By the 27th all but the more serious cases had been evacuated from Kubeibe, the dressing station at Enab was cleared, and the 75th Division was relieved by the 60th Division of the XXth Corps.

The battle casualties in the XXIst Corps during the pursuit were comparatively few, but the number of sick admitted to the medical units was considerable. Between the 13th November and 1st December, 3,347 sick and 1,974 wounded had passed through the immobile sections of the 54th Division field ambulances at Beit Hanun, which was receiving casualties from all divisions of the Corps.

The percentage of slightly wounded was exceedingly high, as had been the case also in the fighting around Gaza in the early days of the month. In the period 13th to 20th November only 16 per cent., and between 21st November and 1st December only 11 per cent. of the wounds were severe.

About 320 wounded and 130 sick of the enemy were also evacuated to Beit Hanun during this period.

In the operations from the 2nd to 30th November, the 52nd Division had 16·74 per cent. of its strength wounded, and 7·65 per cent. ineffective from sickness. The 54th Division lost 12·55 per cent. by wounds and 8·16 per cent. by sickness, and the 75th Division 12·32 per cent. by wounds and 12·45 per cent. by sickness.

The percentage killed and missing was 4·86 in the 52nd, 4·42 in the 54th, and 3·04 per cent. in the 75th Division.

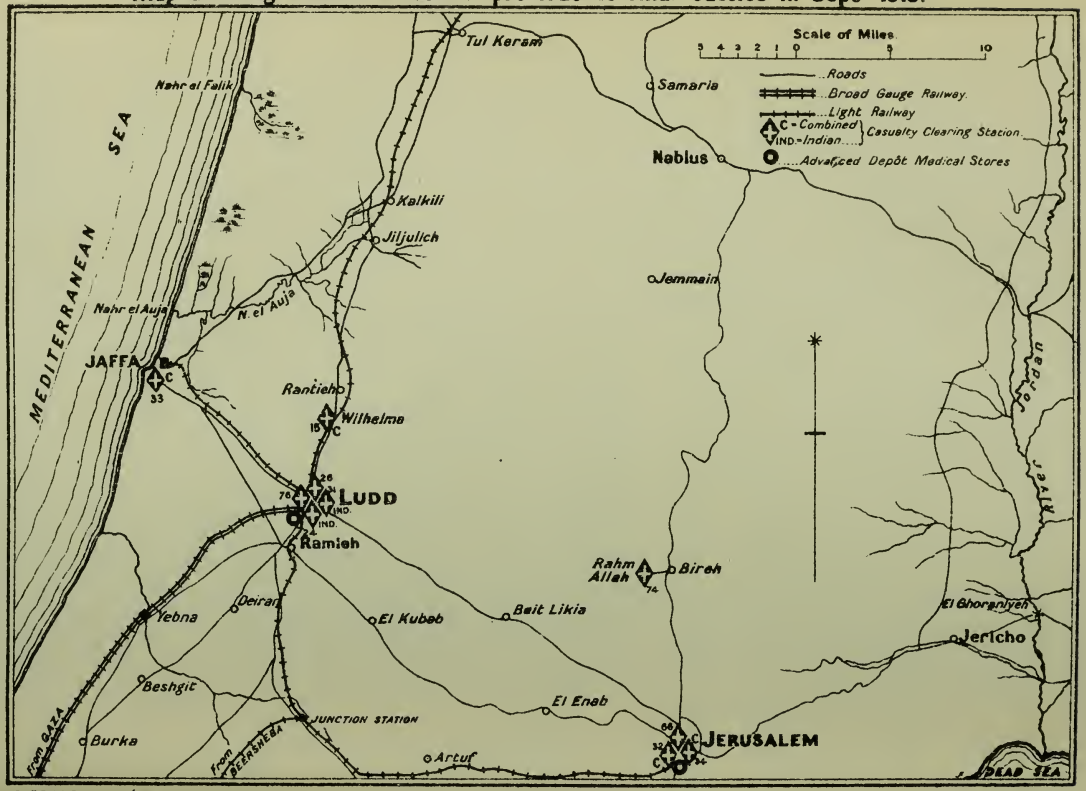
The highest number of wounded received at any one time was in the 54th Division on the 2nd and 3rd November, when 66 officers and 1,634 other ranks were wounded and 23 officers and 233 other ranks killed. On no other day during the November operations of the XXIst Corps did the number of wounded in any division reach 500.

At the end of 1917, the medical situation on the Palestine L. of C. was as follows :—

At Junction Station ..	No. 75 Casualty Clearing Station. No. 35 Motor Ambulance Convoy. No. 8 Advanced Depôt Medical Stores.
At Jaffa	No. 77 Casualty Clearing Station, just brought up from Gaza.
At Jerusalem	No. 66 Casualty Clearing Station, just brought up from Deir-el-Belah.
At Deir-el-Belah ..	No. 74 Casualty Clearing Station. No. 7 Advanced Depôt Medical Stores.
At Imara	No. 65 Casualty Clearing Station. No. 6 Advanced Depôt Medical Stores.
At Deir Sineid ..	No. 35 Casualty Clearing Station. No. 4 Advanced Depôt Medical Stores.
At Rafa	No. 76 Casualty Clearing Station.
At El Arish	No. 26 Casualty Clearing Station. No. 5 Advanced Depôt Medical Stores.
At Masaid (near El Arish)	No. 43 Stationary Hospital. No. 45 ,, ,,
At Mehamdiya ..	No. 36 ,, ,,
At Kantara	No. 24 ,, ,, No. 44 ,, ,,

Military laboratories, Egyptian and Prisoners of War hospitals were also alongside some of the casualty clearing stations and other units in Palestine and Sinai, and sanitary sections were actively employed in clearing up the sanitation of towns and camps in the divisional areas and along the lines of communication.

Map Showing Medical Situation previous to final battles in Sept[r] 1918.



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The Medical Services during the Occupation of Palestine in 1918 *until the Final Battles.*

The period between the entry into Jerusalem at the end of 1917 and the final battles was a period of minor military operations and reorganization, combined with incessant anti-malarial measures and with efforts to stamp out threatened outbreaks of cholera and typhus fever.

The line occupied by the British extended from the Jordan Valley westwards north of Jericho and Jerusalem to the sea between the Nahr-el-Auja and the Nahr-el-Falik, north of Jaffa. The Jordan Valley and the valleys of the wadis running into it from the hills on the west were intensely malarial, and a large number of Egyptian Labour Corps men was employed under the direction of the medical authorities in canalizing the wadis and draining the marshes in order to prevent the breeding of mosquitoes. Similar work was carried on throughout the coastal plain, north of Jaffa and behind the lines on the L. of C., which was equally malarious. This plain varied in width from 7 to 10 miles and consisted of sandy downs interspersed with stretches of black cotton soil which were quite flat and covered in parts with crops of high thistles. Along the coast itself there was a belt of sand dunes with steep cliffs overlooking a narrow beach. Between the Jordan Valley and the coastal plain the British line ran through a series of hills from 1,000 feet to 3,000 feet high. The hills were intersected and cut up into ridges by wadis and their tributaries. There were only one or two main roads suitable for wheeled and motor traffic. From Jerusalem a motor road ran to Jericho and to a bridge-head on the Jordan at Ghoraniyeh. Another road ran north from Jerusalem to Bireh and Nablus. Westwards from Jerusalem there was the main road through El Enab and Ramleh to Jaffa. From Ramleh a road ran northwards to Ludd and through Rantieh towards Tul Keram. These were practically the only roads suitable for motor traffic, but wired roads were constructed along the coastal area for transport to the various positions north of Jaffa.

The broad gauge railway connecting Palestine with Egypt reached Ludd in January 1918, and was opened for hospital trains up to Ludd towards the end of March. It connected at Ludd with the narrow gauge line from Jerusalem to Jaffa. In April this narrow gauge line was converted into a broad gauge as far as Artuf at the foot of the Judæan hills, in the midst of which Jerusalem was situated. It was extended to

Jerusalem in the middle of June. No. 75 C.C.S. and two Egyptian hospitals were opened at Artuf to transfer cases from the narrow to the broad gauge line.

The old Haifa–Damascus narrow gauge railway was connected with Jaffa, Jerusalem and El Afule through Samaria and Tul Keram by a strategical railway to Ludd, passing through Rantieh and a German colony called Wilhelma. Branches, as already noted, had been continued from the Junction Station on the Jaffa–Jerusalem line to the Gaza front at Es Sheria, Irgeig and Beersheba. This line from Junction Station to Beersheba was subsequently converted into a broad gauge by the British.

Slightly wounded waiting to be entrained. Palestine 1918.

These were the railway communications available for the medical services during the operations in Palestine. The hospital trains east of the Suez Canal were now increased. No. 40 Ambulance Train of fifteen coaches arrived from England early in March,* and two trains had been formed for sick of the Egyptian Labour and Camel Transport Corps, and prisoners of war,† so that there were seven hospital trains in all running

* No. 40 Ambulance Train was capable of carrying 600 patients. It was garaged at Kantara, and was used on the Kantara-Gaza section of the line. It rarely came up to Ludd except in an emergency.

† These two trains were Nos. 10 and 11. The coaches of which they were composed had previously been attached, three or four at a time, to the hospital trains, Nos. 6, 8 and 9. They were fitted according to the Zavodovski method of carrying stretchers on slings.

between Palestine and Egypt, in addition to the truck trains for slighter cases. They were garaged at Ludd after March 1918. Between Jerusalem and Ludd only half a train could be employed owing to the steep gradients to Jerusalem, but the first train on this line, on the 19th June, took 135 lying and 65 sitting patients direct to Gaza, where three British and one Indian stationary hospital were now established. The previous arrangement was followed of running half the number of trains between the front and Gaza and the remaining half between Gaza and Kantara. The line had by this time been doubled as far as Rafa, and this made it possible to convert the sections Gaza to El Arish and El Arish to Kantara into one section, and thus run the hospital trains in two instead of in three sections, namely, from Ludd to Gaza, and Gaza to Kantara. As a rule three journeys weekly of ambulance trains were sufficient to keep the Gaza hospitals free from overcrowding. The trains were renumbered. There had been considerable confusion in doing so, as the numbers were twice changed. Eventually the numbering was as follows: —

No.	6	became No.	48		
,,	7	,,	,, 50	For British	
,,	8	,,	,, 51	and Indians.	
,,	9	,,	,, 56		
,,	10	,,	,, 49		
,,	11	,,	,, 57	For Egyptians.	

The trains on the lines west of the Suez Canal were numbered 44, 45, 46 and 47.

For road work No. 35 Motor Ambulance Convoy was the only one with the Force, although two more were asked for in order to provide a convoy for each corps. Consequently corps had to form convoys for themselves out of the cars of divisional field ambulances. No. 35 Motor Ambulance Convoy was retained under D.M.S. control for use where most required. Three motor ambulance companies had been authorized by the War Office for employment at Alexandria (45 cars), Cairo (30 cars) and Kantara (30 cars). The D.M.S. had proposed to bring them up in August and replace them at the bases with lorries and horse drawn vehicles, but they could not apparently be spared from work in Egypt. The number of motor ambulance cars with the three corps at the time was considerably below establishment. The Desert Mounted Corps had 11 heavy and 62 light cars instead of 14 heavy and 72 light ; the XXth

Corps had 34 heavy and 48 light in place of 36 and 54, and the XXIst Corps 4 heavy and 119 light in place of 4 and 160. There was thus a total of 49 heavy and 189 light cars instead of 54 heavy and 232 light.

The horse and camel ambulance transport of the field ambulances was reorganised early in 1918. Each field ambulance was to have 3 heavy horsed ambulance wagons, 7 sand carts and 7 motor ambulance cars. Camels were to be given up, but objections were raised to this as they were essential for ambulance transport work up the wadis, and eventually 50 cacolet camels were also allowed to each field ambulance. Measures were also taken to provide material for the formation of mule cacolets, litters and travois, but these do not appear to have been used to any great extent, as the mules allotted for the purpose were the light wagon and sand cart mules, which were not considered a suitable class of animal for cacolets or litters.

When Indian divisions and battalions joined the army in Palestine a complete reconstruction of the field medical units was carried out. The 3rd and 7th Indian divisions arrived from Mesopotamia with three combined field ambulances each, instead of the two British and three Indian Field Ambulances which had been with each of them when they were in France.

But in addition to these Indian divisions, four of the British divisions, the 10th, 53rd, 60th and 75th, were converted into composite divisions of British and Indian brigades, and combined field ambulances of one British and two Indian sections, as in the 3rd and 7th Indian Divisions, had to be organized. Indian combined casualty clearing stations, and stationary and general hospitals for Indians were also required. Those, however, which came from India or Mesopotamia were deficient in many essential requirements, seriously embarrassing the medical arrangements in Palestine and on the Palestine L. of C. Indian battalions arriving to form the new composite divisions came without medical officers or with orders to return the medical officers on arrival of the battalions in Egypt. The clearing hospitals came with 200 bearers and without proper medical personnel, or organised for any other function than that of collecting and clearing wounded. Apparently there was some misconception in India regarding their function. The scarcity of Indian Medical Service officers was so great that in July 1918 there were only 86 out of an establishment of 283, and there were practically no members of the Assistant-Surgeon or Sub-Assistant Surgeon class. The difficulty therefore

of converting the casualty clearing stations already in Palestine into combined casualty clearing stations, or clearing hospitals as they continued to be called, can be realized.

The combined field ambulances were renumbered as follows:—

Division.	Original Field Ambulances.	New Field Ambulances.
10th Division ..	Nos. 30, 31 and 32 ..	Nos. 154, 165 and 166 Indian Combined.
53rd Division ..	1st, 2nd and 3rd Welsh ..	Nos. 113, 170 and 171 Indian Combined.
60th Division ..	2/4th, 2/5th and 2/6th London	Nos. 121, 160 and 179 Indian Combined.
75th Division ..	Nos. 145, 146 and 147 ..	Nos. 123, 127 and 163 Indian Combined.

A portion of the personnel of the original field ambulances was absorbed into the new combined field ambulances, but one of the original field ambulances, the 1st Welsh of the 53rd Division, remained intact as an independent unit, being available for use in any part of the field as required.

The casualty clearing stations, when reconstruction into combined clearing hospitals took place, were No. 26, No. 65 (formerly No. 53), No. 66 (formerly No. 54), Nos. 74, 75, 76 and 77. Of these Nos. 65, 75 and 77 were merged into combined clearing hospitals and lost their identity in June. There were then five combined clearing hospitals, Nos. 15, 31, 32, 33 and 34, with the Expeditionary Force. No. 31 Combined Clearing Hospital, however, shortly after its arrival in Palestine was converted into a casualty clearing station for Indians only, retaining its number. There was also another clearing station, No. 24, for Indians only. Each combined clearing hospital was organized for 100 British and 300 Indian casualties. All these units were placed under the administration of the A.D.M.S., Palestine L. of C., and distributed as follows before the final battle of September 1918 :—

Jaffa	No. 33 Combined Clearing Hospital.
Ludd	No. 26 Casualty Clearing Station.
	No. 76 ,, ,, ,,
	No. 24 Indian ,, ,,
	No. 31 ,, ,, ,,
Jerusalem ..	No. 66 Casualty Clearing Station.
	No. 32 Combined ,, Hospital
	No. 34 ,, ,, ,,
*Ramallah ..	No. 74 ,, ,, ,,
†Wilhelma ..	No. 15 ,, ,, ,,

* Ramallah was just off the Jerusalem–Nablus road, near Bireh. The actual site of the C.C.H. was on a hill called Wagon Hill, 2 miles N. of Ramallah.

† No. 15 C.C.H. came up from Egypt just before the final battles.

The field ambulances ceased to retain their organization of mobile and immobile sections, but sections of those of the divisions of the Desert Mounted Corps continued to be used as divisional receiving stations at suitable road points to which casualties could be brought back for further evacuation to main dressing stations of the infantry divisions or to casualty clearing stations. Four surgical teams were organized for work as required either at main dressing stations or at casualty clearing stations. Some of these had been organized previous to the battles of Gaza, and during the third battle had been working at Deir-el-Belah, Imara and eventually at Beersheba. Each team consisted, in the later stages of the operations in Palestine, of two operating surgeons, one anæsthetist, and four nursing orderlies. No. 1 Team was to come up from No. 69 General Hospital at Deir-el-Belah, No. 2 from No. 24 Stationary Hospital, Kantara, Nos. 3 and 4 from No. 27 and No. 31 General Hospitals, Cairo. In addition, there was the surgical operating car of the Scottish Horse Mounted Brigade field ambulance, a description of which is given in the first volume of the Surgery of the War by Colonel Wade,* who, as consulting surgeon, supervised generally the surgical work in the field units. This surgical car formed the Desert Mounted Corps mobile operating unit, which was developed out of the Australian advanced operating unit. The equipment for each team was kept at No. 6 Advanced Depôt of Medical Stores at Ludd until required. It was carried in two Ford box cars, which were held until required under the charge of the Officer Commanding No. 35 M.A.C. Two other box cars were also held by him as transport for the personnel of each surgical team.

The advanced depôts of medical stores in the front area were No. 6 at Ludd, No. 8 at Jerusalem, No. 7 at Deir-el-Belah, and No. 5 at El Arish. No. 4, which had been at Deir Sineid until May and then at Gaza, was withdrawn to Ismailia in July 1918, when the Southern Canal Section with No. 26 Stationary Hospital at Ismailia and Nos. 5 and 40 Indian Stationary Hospitals at Suez was added to the Palestine L. of C.

The most advanced position of stationary hospitals was

* Vol. I, Surgery of the War, p. 312. This motor surgical car was completed at Newcastle in December 1914, and in September 1915 was on the beach at Suvla in Gallipoli, coming back to Egypt on the termination of the Dardanelles campaign. In September 1916 it went with the Scottish Horse Field Ambulance to Jeddah. On its return from there it formed part of the Australian Mounted Division advanced operating unit, with which it worked during the battle of Beersheba.

Gaza, where Nos. 47, 48 and 36 and No. 137 Indian were open at the time of the final operations. Nos. 43 and 45 Stationary Hospitals had remained at Masaid, near El Arish, during the early months of the year, but were withdrawn, and replaced by No. 39 Indian General Hospital. No. 45 went to Salonika and No. 43 was disbanded. Mehamdiya, where No. 36 Stationary Hospital had been stationed, ceased to be a hospital centre. It had never proved a satisfactory site and the light railway connecting it with Port Said became derelict. Nos. 24 and 44 Stationary Hospitals remained at Kantara throughout.

The general hospitals on the Palestine L. of C., east of the Suez Canal, were No. 69. No. 78 and No. 44 Indian at Deir-el-Belah, No. 39 Indian at Masaid, No. 41 Indian at Kantara, and No. 14 Australian General Hospital at Port Said. No. 69 General Hospital had 2,080 beds and No. 78 and No. 44 Indian 1,040 beds each.

Sanitary sections were with divisions and in areas on the L. of C. They were constantly employed in anti-malarial work and in cleaning up towns, villages and camps.

Two malarial diagnosis stations were allotted to each corps in April 1918.

Egyptian hospitals and detention hospitals, and prisoners of war hospitals were alongside casualty clearing stations, and in labour camps in the front areas. These were placed under the administration of the A.D.M.S. Palestine L. of C. in July 1918.

The Yeomanry Division became the 1st Mounted Division and a new mounted division, the 2nd Mounted Division, composed of the 7th Mounted Brigade, the Imperial Service Brigade and the Imperial Camel Brigade, was formed in May. The Desert Mounted Corps had then four divisions, the Australian (formerly designated the Imperial Mounted Division), the Anzac, and the 1st and 2nd Mounted Divisions. The two latter were designated the 4th and 5th Cavalry Divisions in August 1918. In the early part of the year two of the mounted divisions and a brigade were sent back to Deir-el-Belah owing to the heavy rains, which had interfered with the bringing up of supplies to such an extent that for a time the troops were on half rations; 4,000 horses of the XXth Corps were also sent back to relieve the situation then.

The XXth Corps up to the time of the final operations kept up a constant pressure against the enemy in the hills north of Jerusalem astride the Nablus road, eastwards to the Jordan Valley and westwards to join up with the XXIst Corps.

The general medical arrangements depended on bringing the wounded from advanced dressing stations in the hills to the main road by hand, or by such wheeled, camel or pack transport as could be used on the tracks. A detachment of No. 74 C.C.S. was brought up in March to Ramallah. Field ambulances of the 53rd Division had already a main dressing station there with a surgical team. From there the wounded were taken in the Corps ambulance cars to Jerusalem, whence they went by rail or motor ambulance convoy to Ludd.

Similar operations were conducted during this period by the XXIst Corps, east and west of the Ludd-Tul Keram road. A corps main dressing station was established at Rantieh, about 8 miles north of Ludd. It was shelled on the 30th April and moved back then to Wilhelma, 2 or 3 miles farther south. The line was advanced by these operations some 10 miles to the north of Ludd and Jaffa. The casualties varied from about 100 to 300 in a series of attacks in March, April, May and June, the greatest number being in an attack by the 75th Division on the 9th April, and the smallest in an attack by the Lahore Division (3rd Indian) on the 28th May. The wounded were evacuated by ambulance car or other transport to Ludd or Jaffa.

Considerable changes were made in the administrative medical services during this period. Surg.-General Swan, who had been D.D.M.S. of the VIIth Corps in France, arrived in Egypt in January to replace Surg.-General Maher, and took over the appointment of D.M.S. at G.H.Q. from Colonel Keble. He remained at G.H.Q. until the 19th September, when he was replaced by Colonel Luce from the XXth Corps. Major-General Swan, as he then was, had by this time organized the medical services during the difficult period of reconstructing the medical units for British and Indians and for the coming final operations. After his departure these final medical preparations, under his administration, underwent no alteration, and proved remarkably efficient. The D.D.M.S. of the Indian Medical Services in Egypt, Colonel Westropp-White, who succeeded Colonel Robinson, was placed on the staff of the D.M.S., when the formation of combined medical units was inaugurated. He had previously been D.D.M.S. of the Southern Canal Section, which at this time was placed under the A.D.M.S., Palestine L. of C. The A.D.M.S. of the Egyptian Hospitals was also attached to the staff of the D.M.S. The Egyptian Labour Corps had suffered and was suffering severely from sickness, their hospitals were extremely congested, and

the sanitation of their camps was defective. It was consequently decided to place them under the administration of the formations in whose area they were, and to bring the A.D.M.S. of their hospitals on to the D.M.S. staff at G.H.Q. Lieut.-Colonel Bagshawe remained on the G.H.Q. staff as A.D.M.S. Lieut.-Colonel Fowler, A.D.M.S. for sanitation, became A.D.M.S. of the 54th Division in March 1918. He was replaced by Lieutenant W. Angus, who was given the temporary rank of Lieutenant-Colonel. Colonel Macdonald was transferred from being D.D.M.S. of the XXIst Corps in April to be an A.D.M.S. at G.H.Q., 2nd Echelon, Cairo. He was replaced by Colonel Sewell, who had been A.D.M.S. of the Western Frontier Force during the operations against the Senussi, and was at the time A.D.M.S. of the 74th Division. There was no change in the administration of the XXth Corps and Desert Mounted Corps until Colonel Luce's transfer to G.H.Q. on 19th September. Colonel Abraham remained A.D.M.S. of the Palestine L. of C. When the Indian divisions arrived and composite divisions were formed, his D.A.D.M.S. (Captain J. H. Wood) was replaced by an I.M.S. officer (Major Munro) who had been in a similar position on the L. of C. in Mesopotamia. A D.A.D.M.S. for Egyptian Hospitals (Major W. W. Treves) was also added to his staff, when the A.D.M.S. for Egyptian Hospitals joined the D.M.S staff at G.H.Q.

Although the health of the troops was good on the whole during this period, malaria was of a severe character and influenza became epidemic during the summer. These diseases and the high incidence of sickness amongst the Labour Corps and Turkish prisoners of war led, after great congestion, to increased expansion of the medical units at railheads and on the L. of C.

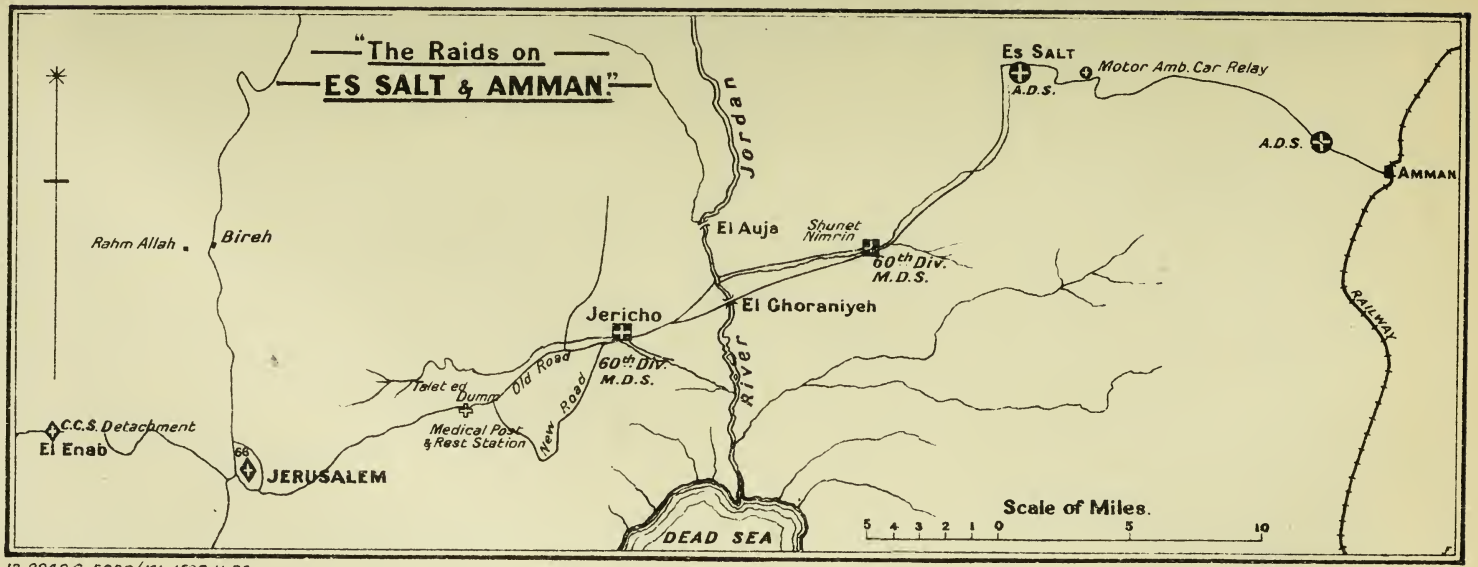
The situation of these medical units at the time when the final operations commenced was as shown above. They were all under the administrative control of the A.D.M.S., Palestine L. of C., whose headquarters were then at Ramleh.

General and stationary hospitals were at Gaza, Deir-el-Belah, Masaid and Kantara, as before, and advanced depôts of medical stores at Ludd, Jerusalem, Deir-el-Belah, and El Arish. Egyptian and prisoners of war hospitals were opened alongside all of the casualty clearing stations and also at Deir-el-Belah, El Arish and Kantara. Military laboratories were at Jaffa, Ludd, Jerusalem and Deir-el-Belah, with a central laboratory at Kantara, together with a special laboratory for investigating suspicious cases of cholera.

The Es Salt and Amman Operations.

During the operations of the 60th Division east of the Jordan against Es Salt and Amman in March 1918, the Anzac Mounted Division and Imperial Camel Brigade were attached to the XXth Corps. Advanced collecting and receiving stations, from which sick and wounded were evacuated to the advanced dressing stations of the 60th Division, were formed by the Mounted Division. At first, owing to rain, the main road leading to Es Salt was impassable for motors beyond the foot of the hills. The other tracks on to the Plain of Moab, used by the mounted troops, could not be used by any wheeled transport. Later, when the sun had dried the road, motor ambulance wagons were brought up to Es Salt and along the road towards Amman. A motor road-head was then formed at Es Salt and for 3 miles east of it, the road to Amman being impassable beyond that point. Ambulance wagons, sand carts and cacolet camels were used for evacuation back to the receiving station, but it was only with the greatest difficulty that the wounded were brought back from Amman. The 60th Division advanced dressing stations followed the brigades to Es Salt. At Amman, which was reached by one of its brigades, an advanced dressing station was opened by a field ambulance. These advanced dressing stations received wounded from the Anzac Mounted Division receiving stations, and evacuated them to the 60th Division main dressing stations, which were established at Shunet Nimrin (at the foot of the Es Salt hill) and at Jericho. These main dressing stations received all casualties from medical units forward of them, and sent them back to Jerusalem. The Desert Mounted Corps mobile operating unit was with the main dressing station at Jericho, and a medical post was opened at Talat-ed-Dumm, halfway between Jericho and Jerusalem, by one of the field ambulances of the 53rd Division, as a rest station for wounded on the journey back to Jerusalem. The distance from Amman to Es Salt was 15 miles, and from there to Jericho another 15 miles. Notwithstanding the difficulties of evacuation and the duration of the journey, the condition of the wounded when they arrived in Jerusalem is said to have been wonderfully good. About 500 were collected and brought back.

A much larger force was engaged in the operations which were conducted by the Desert Mounted Corps to capture the Turkish positions at Es Salt at the end of April and beginning of May. The Australian Mounted Division, the Anzac Mounted



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Division, a brigade of the Yeomanry Division, the Imperial Camel Brigade, the 60th Division (less one brigade), an Indian cavalry brigade of Mysore and Hyderabad Lancers, and an Indian infantry brigade of Alwar, Gwalior and Patiala battalions, together with artillery and engineer units, were engaged in these operations.

The 60th Division was to attack against the enemy positions on the main route to Es Salt, with the Anzac Mounted Division on its right. The Australian Mounted Division was to move rapidly up the valley and was to endeavour to get into Es Salt round the enemy's right by a rapid advance through the hills. The Australian Mounted Division reached Es Salt on the 30th April, the first day of the attack. The infantry attack at the foot of the hills failed and the main road to Es Salt was never in the hands of the British. On the following day the enemy attacked heavily at Es Salt, and part of one field ambulance (No. 4 Light Horse Field Ambulance) was captured.* The mobile sections of field ambulances accompanied their brigades, those of the Australian Division having their equipment carried on pack animals. Half of the bearers were attached to regiments. The immobile sections of the field ambulances of the Australian and Anzac Mounted Divisions formed receiving stations inside the bridgeheads at Ghoraniyeh and El Auja. All casualties east of the Jordan were brought to them by the divisional motor ambulance cars with the mobile sections. From the receiving stations, which suffered more than once by bombing from enemy aircraft, casualties were evacuated by the cars of the 1st Mounted Division, which was not engaged, to a Corps main dressing station for the Desert Mounted Corps formed by the 60th Division field ambulances at Jericho. The Desert Mounted Corps operating unit, a surgical team, and two sections of No. 121 Indian Field Ambulance were attached to this dressing station. The distance from the receiving stations to the main dressing station was 7 miles, and the cars took two and a quarter to four and a half hours for the return journey. Every available vehicle, including G.S. wagons, limbers and Ford vans, was used for clearing the wounded back. There was much rain, and the roads were slippery and bad in patches. Evacuation from Jericho to Jerusalem was carried out by a section of No. 35 M.A.C., and by ten light and thirteen heavy cars of the XXth Corps, and by motor lorries.

* The captured personnel was recovered afterwards at Damascus in September 1918, having been well treated by the enemy.

The fighting around Es Salt was severe, and in order to expedite the despatch of medical and surgical material and comforts to the Australian Mounted Division, which had a dressing station there, an aeroplane was used. The materials were dropped from a height of 1,000 ft. Medical comforts reached the ground intact, but, although carefully packed in cotton-wool, many bottles containing chloroform and drugs were broken.

The massing of the enemy in all directions on the 3rd May necessitated the withdrawal of the Australian Mounted Division from Es Salt, and all wounded were brought back by camel convoy, except two who could not be moved. The convoy took seven hours in returning from Es Salt to the receiving station at bridgehead. The retirement was successfully accomplished, and on the night of the 4th/5th May all three divisions were west of the Jordan, leaving one brigade of the Australian Mounted Division to hold the Ghoraniyeh bridgehead, and one brigade of the Anzac Mounted Division at the El Auja bridgehead.

The casualties admitted between 30th April and 4th May into the main dressing stations were 1,076 wounded and 708 sick.

The D.D.M.S. of the Desert Mounted Corps, Colonel R. M. Downes, comments in his diary on the disorganized state of the medical units during these operations. At the time the decision was made to advance against Es Salt the units were scattered widely at Jericho, Deiran (near Ramleh), and Deir-el-Belah, over 100 miles apart. Two of the immobile sections did not arrive until the third day. Their immobility from lack of transport was one of the chief causes of delay, and demonstrates the unwisdom of depriving any section of a field ambulance, especially a cavalry field ambulance, of its power of rapid movement. Most of the work of the receiving stations of the Desert Mounted Corps divisions was consequently thrown on the immobile sections of the Anzac Mounted Division, which were in the neighbourhood of Jericho at the time the operations commenced. The Indian field ambulance sections had only portions of their transport, had never been in action before, and were not yet organized. What proved a surprise was the ability of camels with the Australian Mounted Division to get up an apparently impossible hilly track to the Es Salt plateau, and to bring wounded down the track in the dark. The condition of the wounded was also unexpectedly good after their long journey back.

In the enemy attack on the Ghoraniyeh bridgehead on the night of the 13th/14th July the general arrangements for evacuation of wounded through advanced dressing stations and receiving stations to a main dressing station at Jericho were similar. The British wounded brought back during this attack numbered 115, and the enemy wounded 124.

These were the main features of the medical arrangements of the Desert Mounted Corps until it was moved to the left of the British line in September for the final operations.

The Medical Services during the Final Operations in Palestine.

The stage was now set for the final act. The XXth Corps, consisting then of the 53rd and 10th Divisions, was north of Jerusalem, east and west respectively of the Nablus road. The 60th Division had been secretly transferred to the extreme left of the XXIst Corps. An independent force under Major-General Sir E. Chaytor, consisting of the Anzac Mounted Division, 20th Indian Infantry Brigade, two battalions of the British West India Regiment, and two battalions (Jewish) of the Royal Fusiliers, was on its right for demonstration in the Jordan Valley and subsequent operations in Trans-Jordania. The XXIst Corps held positions from the left of the 10th Division to the coast with the 54th, 3rd (Lahore), 75th, 7th (Meerut) and 60th Divisions in order from right to left. The Desert Mounted Corps, now consisting of the Australian Mounted Division and the 4th and 5th Cavalry Divisions, was assembled in the orange groves about Jaffa ready to push through along the coast whenever the way was opened by the XXIst Corps.

The Medical Services with Chaytor's Force.—The medical units with this force were the field ambulances of the Anzac Mounted Division, the 1st Welsh Field Ambulance, No. 110 and No. 157 Indian Field Ambulances, the Anzac field laboratory and operating unit, and an Egyptian hospital detachment. Sixty cacolet camels from the 10th and 53rd Divisions had been given to the force. Sick and wounded were to be evacuated to Jerusalem by the Jericho road. They were taken to Jerusalem in the same manner as in the previous operations against Es Salt and Amman. The object of the demonstrations by this force was to induce the enemy to believe that an attack was contemplated on Amman in co-operation with the army of the Emir Feisul, which was then at Kasr-el-Azrak, 50 miles west of Amman. This army was accompanied by British

armoured cars and a French mountain battery, and was in reality advancing northwards with the intention of cutting the Hedjaz railway at Deraa, some 60 miles south of Damascus, and west of the Lake of Tiberias. It eventually moved to Aleppo, which it reached on 25th October, after occupying Damascus on 1st October.

The Medical Services with the XXth Corps.—In the initial attack of 19th September two main dressing stations were established for the XXth Corps, one on the right by Nos. 113 and 171 Combined Field Ambulances of the 53rd Division, and the other on the left at Naby Saleh for the 10th Division by No. 166 Combined Field Ambulance with an operating unit. Advanced dressing stations were opened in the hills in front of these. A light railway ran from El Lubban to Ludd on the left of the 10th Division, and arrangements were made for a train to run daily carrying lightly wounded to Ludd under the direction of the A.D.M.S. of the division. The 53rd Division cleared its wounded at first to the dressing station on the flank and afterwards to the Nablus road. As the operations were conducted in the hills, the field ambulances were all provided with camel ambulance transport. As the attack was a converging one from the flanks towards the Nablus Road, a field ambulance of each division was held in reserve to move up the Nablus Road and open in the centre of the line as soon as that road was open. Arrangements were made to form collecting posts for wounded along the Nablus road as the divisions advanced. Six British and six Indian orderlies were told off for this duty, one British and one Indian orderly for each post. The posts were intended to collect stragglers coming down the road. In addition, three motor ambulance cars patrolled the road for the same purpose. During the advance to Nablus, which was entered on 21st September, the advanced and main dressing stations occupied new positions in conformity with the movements of their divisions over difficult ground and against much opposition. When Nablus was occupied some 400 to 500 Turkish sick and wounded were found in the English hospital there. They were being well cared for by Turkish doctors. No. 74 C.C.S. and a mobile bacteriological laboratory were then ordered up to Nablus, and a section of No. 171 Combined Field Ambulance was put in charge of the English hospital on the 24th September to prepare it for the C.C.S.

For the evacuation of casualties from the main dressing stations of the XXth Corps and the Turkish sick and wounded

to Jerusalem, the cars of the divisional field ambulances had been formed into a corps motor ambulance convoy. This corps convoy cleared 6,250 sick and wounded between the 19th and 27th September with an average of twenty-seven cars daily on the road, each car covering some 88 miles daily. The work of the drivers was continuous, and at the end many of them were completely exhausted.

On the 30th September the 10th Division advanced to Jenin, and sick and wounded of the enemy were evacuated from there by lorries and the corps motor ambulance convoy to Nablus. For evacuation from Jerusalem twelve trains ran daily between Jerusalem and Ludd. Each train was composed of ten coaches and carried 200 patients lying down. All the light cases were evacuated by motor ambulance convoy to Ludd.

The administrative medical control during the operations of the XXth Corps at this period was exercised by Colonel Evatt, who had previously been A.D.M.S. of the 53rd Division. He was with the headquarters of the Corps at Ramallah until the 15th October, and then moved to Nablus. The XXth Corps Headquarters eventually went for a short time to Haifa, where the Lahore Division came under its command. Not long after the Armistice the XXth Corps Headquarters moved down to Egypt.

The Medical Services with the XXIst Corps.—In the initial phase of the final operations the XXIst Corps attacked the enemy line northwards. The 54th Division on the right with the French Palestine and Syria detachment attached to it was to push east of the Tul Keram road through the hills to Kefr Kasim and then form a flank defence facing eastwards. On its left the 3rd (Lahore) Division was to attack the enemy defences near Kefr Saba and then swing east to capture the posts at Jiljulieh and Kalkilieh along the Tul Keram road. The 75th Division on the left of the Lahore Division was to push on to Et Tireh and to remain in the neighbourhood of that place as Corps Reserve, while the 7th (Meerut) Division co-operated on its left, and, after capturing the Et Tireh system of defence, was to swing eastwards into the hills and continue the British line northwards from the 54th Division to Felamieh and Et Taiyibeh along the Tul Keram road facing east. The 60th Division on the extreme left was to advance due north along the coast, secure a bridgehead at Nahr-el-Falik, and, then swing eastwards, move rapidly on Tul Keram and cut the Tul Keram–Nablus road and the railway line. The whole Corps had thus, after driving the enemy out of his line, to

swing to the right, pivoting on the 54th Division and attack the defensive posts along the railway line to Tul Keram, opening a gateway along the coast for the Desert Mounted Corps to pass through and move rapidly to the Plain of Esdraelon.

To meet this tactical situation, the medical arrangements made by the D.D.M.S. of the XXIst Corps, Colonel Sewell, were of a particularly interesting character. A railhead from Ludd had been brought up to Rantieh, and No. 15 Combined Clearing Hospital with an advanced operating unit was opened at Wilhelma Station, south of Rantieh, on the night of the 18th/19th September, with No. 4 Egyptian Detention Hospital alongside. No. 33 Combined Clearing Hospital at Jaffa had accommodation for 400 only, while at Ludd there were two British and two Indian casualty clearing stations, two Egyptian stationary hospitals, and a large hospital for prisoners of war. The French detachment had two mountain field ambulances, a stretcher bearer group, two field hospitals and a clearing hospital. Its casualty clearing station was at Ludd. Otherwise its sick and wounded were evacuated by the British system of evacuation. There was also a French advanced depôt of medical stores with this detachment.

Preparations had been made to provide suitable wire roads for motor ambulance traffic from the front line to the casualty clearing stations at Jaffa and Wilhelma. These roads led to Jaffa through Sarona in one direction and across to Mulebbis, Rantieh and Wilhelma in other directions. Altogether seven such roads or branches from them were constructed. There were also light railways from the front to Sarona, north of Jaffa, and from Rantieh to Ludd.

The XXIst Corps had at its disposal 13 heavy and 106 light ambulance cars in addition to the 8 heavy and 13 light cars which accompanied the 60th Division when it was transferred from the XXth Corps to the coast. Each division was allotted 2 heavy and 22 light cars, and in addition each field ambulance had six light ambulance wagons, 7 sand carts and 50 ambulance camels, 34 of which had Turkish pattern litters for lying down cases, and 16 nets slung between poles for sitting cases.* Mule litters were not used. On the light railways arrangements were made to run trains every half hour. Three trains of eight covered trucks each were prepared for lying cases, each

* The poles and nets replaced the cacolets for sitting cases as being more comfortable.

truck taking six patients on stretchers or ten without stretchers. Walking wounded were to be taken back on ordinary truck trains running alternately with these specially prepared trains. The trains with lying down wounded were to run to Jaffa and those with walking wounded to Ludd.

The principle was adopted of opening one field ambulance only for each division as a main dressing station in the initial stage. The main dressing stations were grouped in pairs for the four divisions on the left at specially constructed sidings on the light railway. They were established on the night of the 18th/19th September only. The advanced dressing stations were thrown out to the head of the wire roads.

The arrangements for the 54th Division on the right were somewhat different, owing to the absence of roads and the broken nature of the country over which it was to operate. An advanced dressing station was established behind a lime-kiln at Mejdel Yaba at first. It was then to push on up the Wadi Rabah. It was to be reinforced later in the day and become a main dressing station, while other sections of the field ambulances pushed on behind the brigades working up the Wadi Rabah and Kanah. Casualties were to be retained at the main dressing station till a road could be made for the motor ambulance cars to evacuate them to No. 15 C.C.H.

Field ambulances not employed at the outset were kept parked ready to follow the anticipated rapid advance of the troops. The 3rd (Lahore) Division was to have one ready to follow the division as soon as Jiljulieh was taken. The 75th Division field ambulances in reserve were to proceed direct to Kalkilieh and open a rest station for casualties coming in from the north and east. Another of its field ambulances was to open, if necessary, at Miskeh, south-west of Et Tireh. The 7th (Meerut) Division reserve field ambulances were to follow the division to Et Tireh and Taiyibeh. The 60th Division was to form, if necessary, a new main dressing station at Nahr-el-Falik with one of the field ambulances in reserve and to bring the other up with the troops to Tul Keram, carrying forward with it any casualties that might occur north of the Nahr-el-Falik. All the field ambulances were instructed to clear as rapidly as possible and join their divisions by the nearest routes. This was the essence of the scheme, as it was hoped by so doing to have a series of dressing stations opened immediately from Tul Keram southwards along the main road to Rantieh, to which No. 15 C.C.H. was moved on the night of the first day.

As soon as the troops had advanced to a distance beyond motor road-heads and the effective radius of the horse-drawn vehicles and camels, evacuation by the original routes was to cease, and wounded were to be carried forward until the eastward swing brought them to the Tul Keram–Rantieh road, along which the ambulance cars could again take up the running. Special arrangements had to be made therefore for bringing the ambulance cars back to their divisions. A motor ambulance park was stationed at Wilhelma, and all cars coming back to the Tul Keram–Rantieh road had to report there and remain parked when no longer required for clearing the original main dressing stations. On the morning of the 20th September, if the road was clear, the divisional cars were to be despatched to Kalkilieh in convoys. At Kalkilieh they were to be retained at the rest station formed by a field ambulance of the 75th Division, until the A.Ds.M.S. of Divisions sent mounted messengers or cyclists to direct them back to their divisions and to the point where they were required.

At all medical posts arrangements were made for the supply of hot food, and large reserves of rations were in readiness at them. Rations were also to be carried forward by field ambulances when they advanced.

During the operations of the 19th September and subsequent days this scheme worked remarkably well. The casualties were comparatively few. A field ambulance of the 3rd (Lahore) Division opened at Hableh on the evening of the first day, and one of the 75th Division at Miskeh, while No. 163 Combined Field Ambulance of the same division, which was in reserve at Mulebbis until noon, moved on to Kalkilieh and opened the rest post there in accordance with the scheme. A field ambulance of the 7th (Meerut) Division in reserve pushed on to Et Taiyibeh. A field ambulance of the 60th Division formed a collecting post at Nahr-el-Falik not only for the division but also for the cavalry passing through, and then went on to Tul Keram, which was reached late at night after a long and trying march over hot sand and a trackless country.

By the night of the 19th/20th the bulk of the motor ambulance cars had come back to Wilhelma as arranged, and were conducted early on 20th September to Kalkilieh, and thence to their divisions. The cars required by the divisions then worked from the front to Tul Keram, and those not required for this duty were pooled to form a corps convoy, which was divided into two sections, one of which ran between Tul Keram and Kalkilieh, and the other between Kalkilieh and Rantieh.

Kalkilieh thus became the central point of evacuation to the combined clearing hospital at Rantieh. Constant streams of motor ambulance cars and lorries poured their loads of sick and wounded into it day and night. Every patient was given a hot meal and shelter and sent on in the second section of the convoy and in lorries to No. 15 C.C.H.

During the three days, 20th, 21st and 22nd September, the number of sick and wounded received by No. 163 Combined Field Ambulance at Kalkilieh was 2,535. By the 1st October 4,000 casualties had been evacuated through it, when, owing to influenza and overwork, it was relieved by a field ambulance of the Lahore Division. A similar rest station was opened on 22nd September at Tul Keram by No. 127 Combined Field Ambulance.

The number of wounded received into the field ambulances of the XXIst Corps between the 19th and 23rd September was as follows :—

Division.	Officers.		Other ranks		Total British and Indian.	French.	Egyptians.	P.of W.
	British.	Indian.	British.	Indian.				
3rd Lahore ..	10	6	129	402	547	—	1	87
7th Meerut ..	29	5	145	495	674	—	—	54
54th	24	—	398	5	427	4	—	67
60th	6	4	93	307	410	—	—	199
75th	22	10	178	590	800	—	—	328
Total ..	91	25	943	1,799	2,858	4	1	735

In addition approximately 2,000 cases of sickness passed through the field ambulances during the same period.

In the subsequent movements of the XXIst Corps, the 60th Division moved back into army reserve at Mulebbis on the 23rd September ; the Meerut Division went to Haifa on the 26th to 29th September, and the 75th Division remained at Et Tireh as Corps reserve. The Lahore Division also remained in the area of the battle about Hableh, but sent a brigade to Semakh and Nazareth. On the 4th October the 54th Division went on to Haifa and the Meerut Division then moved to Beirut, where it arrived on 10th October. It did not remain there, however, but continued its advance till it was concentrated in Tripoli on 28th October. The 54th Division moved then to Beirut and was concentrated there also at the end of October.

In commenting on the results of the medical arrangements Colonel Sewell points out the advantage of opening only one or at the most two field ambulances as a divisional dressing station in the initial phase and keeping the remainder in reserve at good jumping off places for the advance. They had thus a good night's rest before the heavy work which was to follow and were able, by taking the most direct tracks, to save many miles of arduous marching to their new positions on the Tul Keram road. Other points in his comments were the advantage of carrying forward casualties with the division on the camel transport to the main roads, where they would eventually be met by the motor ambulance cars, and of organizing a system by which the cars could come back to this road when their work of clearing the initial main dressing stations was finished. Field ambulances on the Tul Keram road performed the functions of casualty clearing stations to a certain extent, as, for example, No. 163 at Kalkilieh and No. 127 at Tul Keram. Both of these combined field ambulances belonged to the 75th Division, and if the division had been ordered to move forward there would have been a gap of 30 miles between the front line and the nearest casualty clearing station. The use in this way of intermediate posts, formed either by field ambulances or detachments of a casualty clearing station, when the distance to the latter is great, is in accordance with the principles laid down in Field Service Regulations.

Eventually casualty clearing stations were moved up, No. 33 Combined Clearing Hospital from Jaffa to Haifa on 15th October, and No. 32 and No. 15 from Jerusalem and Rantieh to Beirut on the 11th and 28th October respectively. No. 15 was for a short time in October at Tul Keram. No. 74 C.C.S. was transferred from Ramallah to Tripoli in the middle of October. On the 2nd November a section of No. 76 C.C.S and No. 31 Combined Clearing Hospital went to Alexandretta from Ludd, and No. 66 C.C.S. to Damascus from Jerusalem at the end of October. These casualty clearing stations were first brought back to Kantara and sent by sea from there to the Palestine and Syrian ports.

The Medical Services with the Desert Mounted Corps.—The medical arrangements for the Desert Mounted Corps depended very much on those prepared by the XXIst Corps. The Australian Mounted Division and the 4th and 5th Cavalry Divisions had concentrated in the Jaffa–Sarona coastal area before the advance. The medical arrangements throughout their advance were in five stages: (1) during the advance to

Haifa, Nazareth, Tiberias and Beisan ; (2) during the advance on Damascus, when the line of supply was through Nazareth ; (3) during the advance on Damascus, when the line of supply was through Semakh ; (4) during the occupation of Damascus ; and (5) during the advance to Aleppo and until the Armistice.

In the first phase from the 19th to 25th September, there were no regular roads until the Plain of Esdraelon was reached, and it was doubtful if even the light motor ambulance cars could follow the advance. These cars were consequently ordered to follow the Tabsor–El Mughair road and continue if possible behind the divisions. Those of the 4th and 5th Cavalry Divisions got to El Mughair with difficulty and picking up a number of infantry casualties struck eastward with them to Tul Keram, where they arrived early in the afternoon of the 20th September, handing over the casualties to the field ambulance of the 60th Division already there. The cars of the Australian Mounted Division, however, failed to get through, and returned to Mulebbis and went up the main road to Tul Keram, where they also arrived on the afternoon of the 20th September. Evacuation from the Desert Mounted Corps at Musmus, El Afule, Beisan and Jenin was consequently through Tul Keram in the first phase.

The field ambulances of the Corps had difficulty in following the divisions in the rapid advance and many had to abandon equipment on the way in order to lighten their loads. The usual practice was followed of opening divisional receiving stations at fixed points with immobile sections, and it was the equipment of these that had to be abandoned in following the divisions. The places where equipment was abandoned were notified to the A.D.M.S., L. of C., who sent out any transport available to bring the articles back. Wagons and camel transport were used to carry the equipment. The main work, however, of the Desert Mounted Corps field ambulances at this time was the care of enemy prisoners, who fell out in large numbers along the whole route from Tul Keram onwards, suffering from malaria, dysentery, hunger, thirst and exhaustion.

In the second phase it was decided to concentrate all patients at Nazareth, where there were suitable buildings, and hold them there till means of further evacuation was provided. Tul Keram was 41 miles from Nazareth, and as the advance on Damascus progressed the distance would be far too long for direct evacuation to Tul Keram. Patients were also to be left at Haifa to be taken over by the Meerut Division field ambulances.

The D.A.D.M.S. of the Corps was consequently sent on to Nazareth to organize the hospitals there on the 27th September. The divisional receiving stations of the Australian and 5th Cavalry Divisions moved into them. There were several hospitals at Nazareth filled with sick and wounded of the enemy; a French hospital with a staff of sisters and two Syrian doctors and about 150 Turkish patients, the Carmelite monastery with 500 to 600 patients; a German hospital with 120, and an Austrian hospital with 60. There was also a Russian hospital with 268 patients.

No sooner, however, were these hospitals cleaned up and organized than the line of supply to Damascus was shifted and based on Semakh, at the south end of Lake Tiberias.

The third phase of the medical arrangements was consequently along the road from Damascus to Semakh, as the evacuation of patients depended almost entirely on the returning supply lorries. The medical situation was then somewhat precarious, as of the three divisional receiving stations two were at Nazareth with 500 patients, and the third at El Afule with 150 patients, and there were no means of evacuation from either place. No. 111 Combined Field Ambulance was at Semakh but it was already quite full. There was therefore no medical unit of the Desert Mounted Corps to send to Semakh as a receiving station. Fortunately the Haifa–Damascus railway line through El Afule, Beisan and Semakh was more or less intact from Semakh to Haifa, and the 4th Cavalry Divisional receiving station was sent up by it to Jisr Mejamie station, some 5 miles south of Semakh, on the 30th November. A detachment from it opened at the railway station Semakh on the 1st October, and the rest of the unit went there on the following day, after it had cleared its patients by train to Haifa. The first convoy of patients arrived shortly before in an exhausted condition from El Kuneitra. The Australian receiving station had been sent with the heavy ambulance cars to El Kuneitra, some 15 miles north-east of Lake Tiberias on the Damascus road. The road from El Kuneitra back, however, was unfit for the heavy cars, and it was decided to send only walking cases back by lorries to Semakh and retain the more serious cases for forward evacuation to Damascus, whenever the town had been seized.

Damascus was occupied on the 1st October, and the first medical unit entered it the following day. The main medical problem, during its occupation and before the advance to Aleppo, was concerned with the care of enemy sick and wounded, of

whom there was a large number in six hospitals or groups of hospitals. The most crowded of these was the Turkish barracks at Barankie close to the railway station, where there were about 900 patients in a deplorable condition. The other hospitals were the Merkaz or Central Hospital, the French and English hospitals as the centre of a group of houses of various sizes, the German hospital, a civil hospital, and a building used as a hospital near the Kadem railway station. With the exception of the civil hospital, they were full of patients, though indifferently staffed and deficient in medical and surgical requirements and equipment.

The situation was dealt with by appointing Major W. Evans, the D.A.D.M.S. of the Australian Mounted Division, Senior Medical Officer to supervise the hospitals in Damascus. The French and English hospitals were taken over for allied patients ; the other hospitals were cleaned up, organized and reserved for enemy patients. Serious cases were retained in Damascus. Light cases were sent by lorry to Semakh in two stages, halting at El Kuneitra for the night. Emir Feisul's Arab Army was now in occupation of Damascus and it was arranged that Captain Ramsey, R.A.M.C., who was with the Arabs, should control the enemy hospitals under the D.D.M.S. of the Desert Mounted Corps ; but for a time there was some conflict of opinion as to whether the Arab Army or the Desert Mounted Corps should control the captured hospitals and the patients in them.

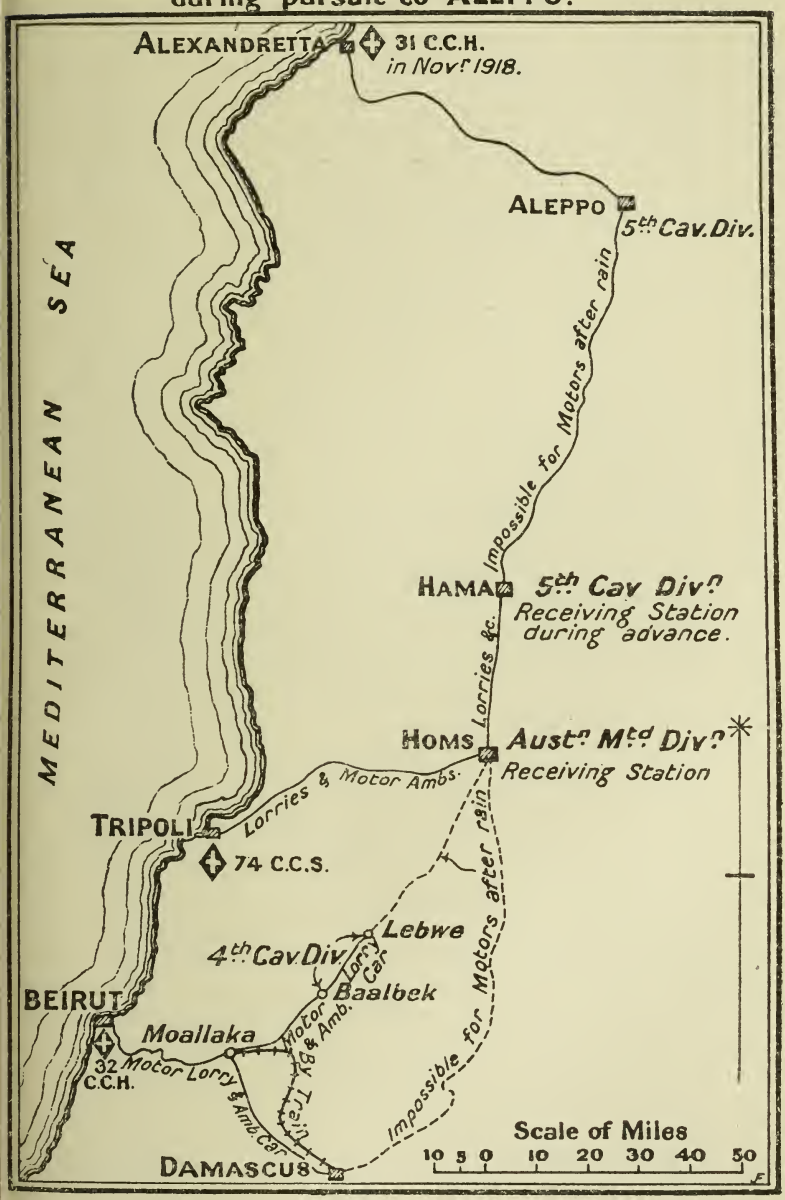
Influenza and malignant malaria broke out amongst the troops around Damascus from the 6th October onwards, and the situation became serious. The mobile sections of the field ambulances took charge of as many as possible, but the French and English hospitals and divisional receiving stations were overcrowded, and had not sufficient medical supplies and equipment for the large number of serious cases in them. The patients in the Turkish hospitals also increased, rapidly reaching a maximum of 2,000 in the Barracks hospital. The British staff themselves suffered severely and this added to the difficulties of the situation until the 18th October when a reinforcement of ninety-six men of the R.A.M.C. arrived.* After the arrival of No. 66 C.C.S. in Damascus in October 1918 all the hospitals were put under the A.D.M.S., L. of C., as far

* These 96 men were Class "A" ex-R.A.M.C. men withdrawn under the man power scheme and undergoing training for the infantry at the depôt at Kantara.

as Moallaka. Evacuation from Damascus was to Beirut. Evacuation from Trans-Jordania and from Deraa was through Samaria to Haifa where No. 33 C.C.H. was moved from Jaffa. Evacuation from El Afule and Jenin was to Tul Keram to which No. 15 C.C.H. had been moved from Rantieh. This scheme of evacuation continued until the broad gauge railway reached Haifa. No. 15 C.C.H. moved to Beirut on 28th October, and was replaced by the 1/1st Welsh Field Ambulance at Tul Keram.

On the 11th October, No. 32 Combined Clearing Hospital arrived at Beirut. Evacuation by Semakh to Haifa then ceased, and patients were sent to Moallaka, halfway between Damascus and Beirut, by train service, and from there by lorries and cars to Beirut. A divisional receiving station was placed at Moallaka. Eighteen heavy cars of No. 35 M.A.C., which at the time consisted of forty-three heavy and seven light cars, arrived in Damascus on 19th October, and were distributed to Homs and Moallaka. Those sent to Homs, where there was also a divisional receiving station, were for evacuation to No. 74 C.C.S., then arriving at Tripoli.

During the advance of the 5th Cavalry Division to Aleppo, a halfway post was formed at Hama by a divisional receiving station, for evacuation to Homs, but little use was made of this evacuation route during the advance until the divisional receiving station had arrived. Until then, patients were carried on with the division to Aleppo, as in the advance to Damascus. At Aleppo a large building in a Turkish school was taken over as a hospital by the 5th Cavalry Division medical units. It was capable of accommodating 400 patients. In the last action, fought by the 15th Cavalry Brigade in forcing an entry into the town on the night of the 25th October and during the pursuit of the enemy the next day, there were many casualties, and, consequently, British nursing sisters were sent to work in the hospitals in Aleppo. Until No. 76 C.C.S. and No. 31 C.C.H. reached Alexandretta by sea, from Egypt, where they were then waiting to embark, the seriously wounded and sick had to be retained in Aleppo. The slighter cases were evacuated by motor ambulance cars and lorries to Tripoli in three stages: the first stage being to Hama, where the 5th Cavalry Divisional receiving station took them over; the next to Homs, where the Australian Mounted Division receiving station was established; and the final stage from there to Tripoli. The general scheme of evacuation was then as shown on the sketch map.


General scheme of evacuation
during pursuit to ALEPPO.
ALEXANDRETTA
31 C.C.H.
in Novr 1918.
ALEPPO
5th Cav. Div.
MEDITERRANEAN SEA
Impossible for Motors after rain
HAMA
5th Cav Divn
Receiving Station
during advance.
Lorries &c.
HOMS
Austn Mtd Divn
Receiving Station
Lorries & Motor Ambs.
TRIPOLI
74 C.C.S.
Lebwe
4th Cav Div
Lorry
Car
Baalbek
BEIRUT
Moallaka
Motor Lorry & Amb.
32 Motor Lorry & Amb. Car
C.C.H.
Train
Impossible for Motors after rain
DAMASCUS
Scale of Miles
10 5 0 10 20 30 40 50

No. 31 Combined Clearing Hospital landed at Alexandretta on the 14th November and evacuation by Hama and Homs to Tripoli ceased. Until then, as medical and surgical stores sent up by road from Tripoli were being delayed, some material was sent up on two occasions to Aleppo by aeroplane from Haifa.

The number of sick and wounded admitted to the field ambulances of the Desert Mounted Corps, week by week, during these operations, is shown in the following table :—

Week ending	Australian Mounted Division.		4th Cavalry Division.		5th Cavalry Division.		Corps troops.		Other formations.		Total.	
	S.	W.	S.	W.	S.	W.	S.	W.	S.	W.	S.	W.
21st Sept. ..	224	14	178	—	230	3	182	—	11	2	825	19
28th Sept. ..	225	84	213	61	198	8	519	—	37	—	1,192	153
5th Oct. ..	308	34	440	31	291	7	753	—	64	—	1,856	72
12th Oct. ..	468	1	990	—	327	6	608	—	355	—	2,748	7
19th Oct. ..	367	—	1,287	—	198	—	34	—	143	5	2,029	5
26th Oct. ..	354	—	313	—	153	38	21	—	45	—	886	38
2nd Nov. ..	353	—	199	—	133	4	34	—	53	—	772	4
9th Nov. ..	250	—	110	—	125	—	34	—	—	—	519	—
16th Nov. ..	174	—	85	—	112	—	121	1	4	—	496	1
Total ..	2,723	133	3,815	92	1,767	66	2,306	1	712	7	11,323	299

The number of wounded was consequently small as compared with the sick. The majority were received into the divisional receiving stations and hospitals in Damascus, to which a total of 11,035 sick and wounded were admitted.

The medical units of the Anzac Mounted Division with Sir E. Chaytor's Force during the same period received 6,450 sick and wounded from the division and 1,902 from attached troops, chiefly for sickness.

The number of sick and wounded prisoners of war admitted to the Desert Mounted Corps field ambulances was 2,096, and, in addition, 8,250 were admitted into the Turkish hospitals in Damascus. During the whole period over 30,000 Turkish sick and wounded passed through British hospitals, constituting about one-third of the prisoners of war

The high incidence of sickness in the Desert Mounted Corps is attributed chiefly to the operations in the highly malarious Esdraelon Valley as well as to the epidemic of influenza. Cholera was reported to be prevalent amongst the population in the neighbourhood of Tiberias, but only one case occurred amongst the troops. The Turkish prisoners suffered severely from pellagra, and the D.M.S. sent Lieut.-Colonel Lelean to co-operate with Colonel Boyd, one of the consulting physicians, in investigating in Egypt the cause of this disease amongst the prisoners who had been sent down to the base.*

* See Vol. I, Diseases of the War, Chapter XXI.

The problem of evacuation from Palestine to Egypt became comparatively simple after the ports of Haifa, Beirut, Tripoli and Alexandretta, at all of which there was ample hospital accommodation, were occupied, as the seriously sick and wounded were then transferred to Egypt by hospital ship, but owing to shortage of hospital ships there was at one period serious congestion both in Beirut and in Haifa. Light cases were also evacuated by sea on supply transports, and medical and surgical stores and equipment were brought up by sea to these ports. Consequently the railway line of communication through Ludd, Gaza, Deir-el-Belah and Kantara became of less and less importance, and the medical units on that line were gradually brought back to Egypt and demobilized.

The chief difficulties with which the medical services had to contend in the final pursuit of the enemy, were the enormous numbers of sick prisoners of war who had to be dealt with, and the high incidence of sickness from malaria and influenza. Malaria commenced, as noted above, after the enemy areas had been entered and the incubation period had elapsed. The rush of sick then was overwhelming and was only checked by the medical authorities insisting on the bare minimum of troops being permitted to continue the pursuit and the remainder being withdrawn to the original healthy camp sites.

APPENDIX A.

1.—MEDICAL UNITS OF THE BRITISH EXPEDITIONARY FORCE ON THE WESTERN FRONT.

Field Ambulances.

Unit.	Date of arrival.	Remarks.
1st Div.—		
No. 1 Field Ambulance ..	18. 8.14	
No. 2 ditto. ..	19. 8.14	
No. 3 ditto. ..	19. 8.14	No. 3 Field Ambulance left 1st Div. and joined Guards Div. in August 1915, being replaced by No. 141 Field Ambulance.
2nd Div.—		
No. 4 Field Ambulance ..	17. 8.14	No. 4 Field Ambulance left 2nd Div. and joined Guards Div. in August 1915, being replaced by No. 19 Field Ambulance, the latter being transferred to the 33rd Div. in Nov. 1915 and replaced by No. 100 Field Ambulance.
No. 5 ditto. ..	19. 8.14	
No. 6 ditto. ..	20. 8.14	
3rd Div.—		
No. 7 Field Ambulance ..	17. 8.14	
No. 8 ditto. ..	19. 8.14	
No. 9 ditto. ..	20. 8.14	No. 9 Field Ambulance left 3rd Div. and joined the Guards Div. in August 1915, being replaced by No. 142 Field Ambulance.
4th Div.—		
No. 10 Field Ambulance ..	23. 8.14	
No. 11 ditto. ..	24. 8.14	
No. 12 ditto. ..	24. 8.14	
5th Div.—		
No. 13 Field Ambulance ..	18· 8.14	These field ambulances left for Italy 1.12.17, and returned 3.4.18.
No. 14 ditto. ..	20· 8.14	
No. 15 ditto. ..	20· 8.14	
6th Div.—		
No. 16 Field Ambulance ..	11. 9.14	No. 16 Field Ambulance taken off strength of 6th Div. 7.10.14, and in its place came No. 19 Field Ambulance (12.10.14). No. 16 Field Ambulance returned to 6th Div. 17.10.14.
No. 17 ditto. ..	12. 9.14	
No. 18 ditto. ..	11. 9.14	
No. 19 Field Ambulance ..	21. 8.14	Temp. attached to 6th Div. 12.10.14 to 16.10.14, when it rejoined the 19th Inf. Bde. Att. 8th Div. 20.7.15. Att. 2nd Div. August 1915 until Nov. 1915, when it joined the 33rd Div.
No. 20 Field Ambulance ..	21. 8.14	Army Troops.

Unit.	Date of arrival.	Remarks.
7th Div.—		
No. 21 Field Ambulance ..	7.10.14	Nos. 21, 22 and 23 Field Ambulances left with Division on 19.11.17 for Italy.
No. 22 ditto. ..	8.10.14	
No. 23 ditto ..	7.10.14	
8th Div.—		
No. 24 Field Ambulance ..	6.11.14	T.F. Field Amb. 1/1st Wessex.
No. 25 ditto. ..	6.11.14	ditto. 1/2nd do.
No. 26 ditto. ..	6.11.14	ditto. 1/3rd do.
9th Div.—		
No. 27 Field Ambulance ..	10. 5.15	
No. 28 ditto. ..	11. 5.15	
No. 29 ditto. ..	12. 5.15	No. 29 Field Ambulance left 9th Div. 29.5.16 for Rouen, and the No. 1 South African Field Ambulance took its place in May 1916. No. 29 Field Ambulance was disbanded 27.2.17. The South African Field Ambulance was relieved by No. 76 Field Ambulance 9.9.18 until 26.9.18, when the 2/1st E. Lancs. Field Ambulance joined the Div. on No. 76 Field Ambulance rejoining the 25th Div.
11th Div.—		
No. 33 Field Ambulance ..	6. 7.16	These field ambulances came with the 11th Div. from Egypt.
No. 34 ditto. ..	6. 7.16	
No. 35 ditto. ..	2. 7.16	
12th Div.—		
No. 36 Field Ambulance ..	30. 5.15	
No. 37 ditto. ..	1. 6.15	
No. 38 ditto. ..	1. 6.15	
14th Div.—		
No. 42 Field Ambulance ..	19. 5.15	The Division proceeded to England for re-organization on 17.6.18, returning to France 4.7.18.
No. 43 ditto. ..	21. 5.15	
No. 44 ditto. ..	22. 5.15	
15th Div.—		
No. 45 Field Ambulance ..	8. 7.15	
No. 46 ditto. ..	10. 7.15	
No. 47 ditto. ..	10. 7.15	
37th Div.—		
No. 48 Field Ambulance ..	29. 7.15	
No. 49 ditto. ..	31. 7.15	
No. 50 ditto. ..	31. 7.15	
17th Div.—		
No. 51 Field Ambulance ..	13. 7.15	
No. 52 ditto. ..	15. 7.15	
No. 53 ditto. ..	15. 7.15	
18th Div.—		
No. 54 Field Ambulance..	25. 7.15	
No. 55 ditto. ..	27. 7.15	
No. 56 ditto. ..	27. 7.15	
19th Div.—		
No. 57 Field Ambulance ..	18. 7.15	
No. 58 ditto. ..	19. 7.15	
No. 59 ditto. ..	19. 7.15	

Unit.	Date of arrival.	Remarks.
20th Div.—		
No. 60 Field Ambulance ..	21. 7.15	
No. 61 ditto. ..	25. 7.15	
No. 62 ditto. ..	25. 7.15	
21st Div.—		
No. 63 Field Ambulance ..	9. 9.15	T.F. Field Ambs. 2/2nd W. Lancs.
No. 64 ditto. ..	11. 9.15	ditto. 2/3rd do.
No. 65 ditto. ..	11. 9.15	ditto. 3/3rd do.
22nd Div.—		
No. 66 Field Ambulance ..	7. 9.15	Left with Division for Salonika first week of November 1915.
No. 67 ditto. ..	7. 9.15	
No. 68 ditto. ..	7. 9.15	
23rd Div.—		
No. 69 Field Ambulance ..	25. 8.15	Left France for Italy 8.11.17.
No. 70 ditto. ..	27. 8.15	ditto. 10.11.17.
No. 71 ditto. ..	27. 8.15	ditto. 8.11.17.
24th Div.—		
No. 72 Field Ambulance ..	2. 9.15	
No. 73 ditto. ..	2. 9.15	
No. 74 ditto.	2. 9.15	
25th Div.—		
No. 75 Field Ambulance ..	25. 9.15	The 25th Div. proceeded to England for re-organization on 30.6.18, returning to France 15.9.18. No. 76 Field Ambulance joined the 9th Div. in relief of South African Field Ambulance 9.9.18 to 26.9.18, when it was relieved by the 2/1st E. Lancs. Field Ambulance. No. 76 Field Ambulance then rejoined 25th Div.
No. 76 ditto. ..	27. 9.15	
No. 77 ditto. ..	27. 9.15	
26th Div.—		
No. 78 Field Ambulance ..	19. 9.15	Nos. 78 and 80 Field Ambulances left France for Salonika 9.1.16 and No. 79 Field Ambulance on 6.12.15.
No. 79 ditto. ..	21. 9.15	
No. 80 ditto. ..	21. 9.15	
27th Div.—		
No. 81 Field Ambulance ..	22.12.14	1/1st Home Counties Field Ambulance.
No. 82 ditto. ..	22.12.14	1/2nd ditto.
No. 83 ditto. ..	22.12.14	1/3rd ditto.
		These Field Ambulances left with the 27th Div. on 28.11.15 for Salonika.
28th Div.—		
No. 84 Field Ambulance ..	16. 1.15	1/2nd London Field Ambulance.
No. 85 ditto. ..	18. 1.15	1/3rd ditto.
No. 86 ditto. ..	19. 1.15	1/2nd Northumbrian Field Ambulance.
		These Field Ambulances left with the 28th Div. on 24.10.15 for Alexandria and re-embarked there for Salonika in Nov. 1915.

Unit.	Date of arrival.	Remarks.
29th Div.—		
No. 87 Field Ambulance ..	20. 3.16	1/1st W. Lancs. F.A.
No. 88 ditto. ..	19. 3.16	1/1st E. Anglian F.A.
No. 89 ditto. ..	26. 3.16	1/1st Highland F.A. This Division came from Egypt.
32nd Div.—		
No. 90 Field Ambulance ..	21.11.15	
No. 91 ditto. ..	23.11.15	
No. 92 ditto. ..	23 11 15	
31st Div.—		
No. 93 Field Ambulance ..	8. 3.16	This Division came from Egypt.
No. 94 ditto. ..	7. 3.16	
No. 95 ditto. ..	9. 3.16	
30th Div.—		
No. 96 Field Ambulance ..	11.11.15	County Palatine Field Ambulance.
No. 97 ditto. ..	9.11.15	ditto. ditto.
No. 98 ditto. ..	7.11.15	1/2nd W. Lancs. Field Ambulance.
33rd Div.—		
No. 99 Field Ambulance ..	15.11.15	
No. 101 ditto. ..	18.11.15	
No. 19 ditto. ..		*See* No. 19 Field Ambulance.
No. 100 Field Ambulance .	18.11.15	Originally mobilized with 33rd Div., but on arrival in France was posted to 2nd Div. in relief of No. 19 Field Ambulance.
34th Div.—		
No. 102 Field Ambulance .	10. 1.16	
No. 103 ditto. ..	12. 1.16	
No. 104 ditto. ..	9. 1.16	
35th Div.—		
No. 105 Field Ambulance .	29. 1.16	
No. 106 ditto. ..	30. 1.16	
No. 107 ditto. ..	31. 1.16	
36th Div.—		
No. 108 Field Ambulance .	3.10.15	
No. 109 ditto. ..	5.10.15	
No. 110 ditto. ..	5.10.15	
16th Div.—		
No. 111 Field Ambulance .	19.12.15	The 16th Div. proceeded to England for re-organization on 30.6.18, returning 31.7.18.
No. 112 ditto. ..	19.12.15	
No. 113 ditto. ..	18. 2.16	
38th Div.—		
No. 129 Field Ambulance .	2.12.15	
No. 130 ditto. ..	4.12.15	
No. 131 ditto. ..	6.12.15	
39th Div.—		
No. 132 Field Ambulance .	4. 3.16	
No. 133 ditto. ..	6. 3.16	
No. 134 ditto. ..	7. 3.16	
40th Div.—		
No. 135 Field Ambulance .	3. 6.16	
No. 136 ditto. ..	3. 6.16	
No. 137 ditto. ..	4. 6.16	

Unit.	Date of arrival.	Remarks.
41st Div.—		
No. 138 Field Ambulance .	3. 5.16	Nos. 138, 139 and 140 Field Ambulances left for Italy on 17.11.17 and returned to France 2.3.18.
No. 139 ditto. ..	4. 5.16	
No. 140 ditto. ..	6. 5.16	
No. 141 Field Ambulance .	11. 8.15	Joined 1st Div. in Aug. 1915.
No. 142 ditto. ..	11. 8.15	Joined 3rd Div. in Aug. 1915.
42nd E. Lancs. Div.—		
1/1st E. Lancs Field Ambulance.	2. 3.17	Came from Egypt.
1/2nd ditto. ..	6. 3.17	ditto.
1/3rd ditto. ..	11. 3.17	ditto.
46th N. Mid. Div.—		
1/1st N. Midland Field Ambulance.	Feb. 1915	The Division left for Egypt 2.1.16, but the field ambulances did not accompany it, and the Division returned to France 9.2.16.
1/2nd ditto. ..	Feb. 1915	
1/3rd ditto. ..	5. 3.15	
47th (2nd) Lond. Div.—		
4th London Field Ambulance.	17. 3.15	
5th ditto. ..	17. 3.15	
6th ditto. ..	16. 3.15	
48th S. Mid. Div.—		
1/1st S. Midland Field Ambulance.	30. 3.15	Left for Italy 23.11.17.
1/2nd ditto. ..	30. 3.15	ditto.
1/3rd ditto. ..	30. 3.15	ditto.
49th W. Riding Div.—		
1/1st W. Riding Field Ambulance.	14. 4.15	
1/2nd ditto. ..	15. 4.15	
1/3rd ditto. ..	16. 4.15	
50th Northumbrian Div.—		
1/1st Northumbrian Field Ambulance.	18. 4.15	
2/2nd ditto. ..	19. 4.15	
1/3rd ditto. ..	21. 4.15	
51st Highland Div.—		
2/1st Highland Field Ambulance.	3. 5.15	
1/2nd ditto. ..	1. 5.15	
1/3rd ditto. ..	3. 5.15	
52nd Lowland Div.—		
1/1st Lowland Field Ambulance.	17. 4.18	Came from Egypt.
1/2nd ditto. ..	17. 4.18	ditto.
1/3rd ditto. ..	17. 4.18	ditto.
55th West Lancs. Div.—		
1/3rd W. Lancs. Field Ambulance.	15. 1.16	
2/1st ditto. ..	15. 1.16	
2/1st Wessex Field Ambulance.	15. 1.16	

Unit.	Date of arrival.	Remarks.
56th (1st) Lond. Div.—		
2/1st London Field Ambulance.	22. 2.16	
2/2nd ditto. ..	22. 2.16	
2/3rd ditto. ..	22. 2.16	
57th (2nd) W. Lancs. Div.—		
3/2nd W. Lancs. Field Ambulance.	11. 2.17	
2/2nd Wessex Field Ambuance.	12. 2.17	
2/3rd ditto. ..	13. 2.17	
58th (2/1st) London Div.—		
2/1st Home Counties Field Ambulance.	24. 1.17	
2/2nd ditto. ..	25. 1.17	
2/3rd ditto. ..	25. 1.17	
59th (2nd) N. Mid. Div.—		
2/1st N. Midland Field Ambulance.	22. 2.17	
2/2nd ditto. ..	24. 2.17	
2/3rd ditto. ..	26. 2.17	
60th (2/2nd) London Div.—		
2/4th London Field Ambulance.	23. 6.16	Left 19.11.16 for Salonika.
2/5th ditto. ..	23. 6.16	Left 28.11.16 do.
2/6th ditto. ..	24. 6.16	Left 5.12.16 do.
61st (1st) S. Mid. Div.—		
2/1st S. Midland Field Ambulance.	23. 5.16	
2/2nd ditto. ..	25. 5.16	
2/3rd ditto. ..	26. 5.16	
62nd (2nd) W. Rid. Div.—		
2/1st W. Riding Field Ambulance.	9. 1.17	
2/2nd ditto. ..	10. 1.17	
2/3rd ditto. ..	12. 1.17	
63rd (R.N.) Div.—		
No. 148 Field Ambulance .	23. 5.16	Formerly 1st, 2nd and 3rd R.N. Field Ambulances. Designation changed 3.7.17. The Division came from Egypt.
No. 149 ditto. ..	23. 5.16	
No. 150 ditto. ..	23. 5.16	
66th (2nd) E. Lancs. Div.—		
2/1st East Lancs. Field Ambulance.	27. 2.17	2/1st E. Lancs. Field Ambulance joined 9th Div. 26.9.18, relieving No. 76 Field Ambulance.
2/2nd ditto. ..	28. 2.17	
2/3rd ditto. ..	2. 3.17	
74th Div.—		
No. 229 Field Ambulance .	7. 5.18	Came from Egypt.
No. 230 ditto. ..	7. 5.18	ditto.
No. 231 ditto. ..	7. 5.18	ditto.
No. 1 Cavalry Field Ambulance.	16. 8.14	
No. 2 ditto. ..	19. 8.14	
No. 3 ditto. ..	17. 8.14	
No. 4 ditto. ..	18. 8.14	
No. 5 ditto. ..	18. 8.14	

Unit.	Date of arrival.	Remarks.
No. 6 Cavalry Field Ambulance.	8.10.14	
No. 7 ditto. ..	8.10.14	
No. 8 ditto. ..	16.12.14	
No. 9 ditto. ..	18. 5.15	
No. 1 New Zealand Field Ambulance.	11. 4.16	Came from Egypt.
No. 2 ditto. ..	17. 4.16	ditto.
No. 3 ditto. ..	11. 4.16	ditto.
No. 4 ditto. ..	30. 5.17	This unit was formed at Sling 28.4.17 and attached to the 4th N.Z. Infantry Bde.
No. 1 Australian Field Ambulance.	30. 3.16	Came from Egypt.
No. 2 ditto. ..	31. 3.16	ditto.
No. 3 ditto. ..	3. 4.16	ditto.
No. 4 ditto. ..	9. 6.16	ditto.
No. 5 ditto. ..	June 1916	ditto.
No. 6 ditto. ..	26. 3.16	ditto.
No. 7 ditto. ..	20. 3.16	ditto.
No. 8 ditto. ..	23. 6.16	ditto.
No. 9 ditto. ..	24.11.16	Arrived in England July 1916.
No. 10 ditto. ..	25.11.16	Arrived in England September 1916.
No. 11 ditto. ..	25.11.16	Arrived in England 21.7.16.
No. 12 ditto. ..	11. 6.16	Came from Egypt.
No. 13 ditto. ..	13. 6.16	ditto.
No. 14 ditto. ..	27. 6.16	ditto.
No. 15 ditto. ..	28. 6.16	ditto.
No. 1 South African Field Ambulance.	May 1916	Attached to 9th Div. in place of No. 29 Field Ambulance. Afterwards joined the 66th Div. in September 1918.
No. 1 Canadian Field Ambulance.	12. 2.15	Arrived England 14.10.14.
No. 2 ditto. ..	15. 2.15	Arrived England 15.10.14.
No. 3 ditto. ..	12. 2.15	
No. 4 ditto. ..	14. 9.15	Arrived England 28.4.15.
No. 5 ditto. ..	16. 9.15	Arrived England 29.4.15.
No. 6 ditto. ..	16. 9.15	Arrived England 20.4.15.
No. 7 Canadian Cavalry Field Ambulance.	13. 2.16	Arrived England January 1916.
No. 8 Canadian Field Ambulance.	8. 5.16	Arrived England 9.4.16
No. 9 ditto. ..	8. 4.16	Arrived England 12.3.16.
No. 10 ditto. ..	8. 4.16	
No. 11 ditto. ..	11. 8.16	Arrived England 30.5.16.
No. 12 ditto. ..	12. 8.16	In England 7.8.16
No. 13 ditto. ..	13. 8.16	ditto.
No. 14 ditto. ..	6. 6.18	In England 1.6.18.

Unit.	Date of arrival.	Remarks.
3rd (Lahore) Division.—		
No. 7 British Field Ambulance.	25. 9.14	The Division with its field ambulances left 20.12.15 for Mesopotamia.
No. 8 ditto. ..	26. 9.14	
No. 111 Indian ditto. ..	26. 9.14	
No. 112 ditto. ..	26. 9.14	
No. 113 ditto. ..	26. 9.14	
7th (Meerut) Division—		
No. 19 British Field Ambulance.	26. 9.14	The Division with its field ambulances left 14.12.15 for Mesopotamia.
No. 20 ditto. ..	26. 9.14	
No. 128 Indian Field Ambulance.	26. 9.14	
No. 129 ditto. ..	26. 9.14	
No. 130 ditto. ..	26. 9.14	
1st Indian Cavalry Division—		
Ambala Cavalry Field Ambulance.	10.11.14	The Division was designated 4th Cavalry Div. in October 1916, and with its field ambulances left 1.3.18 for Egypt.
Sialkote ditto. ..	10.11.14	
Lucknow ditto. ..	10.11.14	
2nd Indian Cavalry Division—		
Secunderabad Cavalry Field Ambulance.	27. 9.14	The Division was designated the 5th Cavalry Div. in October 1916, and with its field ambulances left 12.4.18 for Egypt.
Meerut ditto. (No. 119)	16.12.14	
Mhow ditto. (No. 104)	15.12.14	
Jodhpur ditto. (No. 132)	12.11.14	

Casualty Clearing Stations.

Unit.	Date of arrival.	Remarks.
No. 1 Casualty Clearing Stn.	19.18.14	
No. 2 ditto. ..	19. 8.14	
No. 3 ditto. ..	18. 8.14	
No. 4 ditto. ..	18. 8.14	
No. 5 ditto. ..	19. 8.14	
No. 6 ditto. ..	19. 8.14	
No. 7 ditto. .. (1/1st West Riding).	1.11.14	
No. 8 Casualty Clearing Stn.	7.11.14	
No. 9 ditto. ..	23.12.14	Left for Italy 7.11.17. Returned 20.11.18.
No. 10 ditto. ..	19. 1.15	
No. 11 ditto. ..	27. 4.16	Came from Egypt.
No. 12 ditto. ..	13. 5.15	
No. 13 ditto. ..	11. 7.16	Came from Egypt.
No. 15 ditto. ..	2. 6.15	
No. 17 ditto. ..	22. 5.15	
No. 18 ditto. ..	11. 7.15	
No. 19 ditto. ..	1. 8.15	
No. 20 ditto. ..	16. 7.15	
No. 21 ditto. ..	28. 7.15	

Unit.	Date of arrival.	Remarks.
No. 22 Casualty Clearing Stn.	20. 7.15	
No. 23 ditto. ..	25. 7.15	
No. 24 ditto. ..	12. 3.17	Came from Egypt. Left 19.11.17 for Italy.
No. 27 ditto. ..	12. 9.15	Left for Salonika 13.11.15.
No. 28 ditto. ..	7. 9.15	Left for Salonika 28.11.15.
No. 29 ditto. ..	28. 8.15	
No. 30 ditto. ..	2. 9.15	
No. 32 ditto. ..	22. 9.15	
No. 33 ditto. ..	22. 8.15	
No. 34 ditto. .. (West Lancs.)	10.11.15	
No. 35 Casualty Clearing Stn.	27. 4.16	Came from Egypt. Left 11.12.16 for Salonika.
No. 36 ditto. ..	25.11.15	
No. 37 ditto. ..	18.11.15	Left 1.12.17 for Italy. Returned 28.4.18. This unit was captured by the enemy 27.5.18. Unit reformed 24.6.18.
No. 38 ditto. ..	26. 2.16	Left 12.11.17 for Italy. Rejoined from Italy 19.3.18.
No. 39 ditto. ..	26. 2.16	Left 21.11.17 for Italy.
No. 40 ditto. (Ulster Division).	6.10.15	Left 28.10.15 for Salonika.
No. 41 Casualty Clearing Stn. (38th Welsh Division).	4.12.15	
No. 42 Casualty Clearing Stn.	19.12.15	
No. 43 ditto. ..	3. 3.16	
No. 44 ditto. ..	9. 5.16	
No. 45 ditto. ..	9. 5.16	
No. 46 Casualty Clearing Stn. (1/1st Wessex).	28. 5.16	
No. 47 Casualty Clearing Stn. (1/1st Home Counties).	27. 5.16	
No. 48 Casualty Clearing Stn.	28. 5.16	
No. 49 Casualty Clearing Stn.	3. 6.16	
No. 50 Casualty Clearing Stn. (1/1st Northumbrian).	19. 4.15	
No. 51 Casualty Clearing Stn. (1/1st Highland).	4. 5.15	
No. 53 Casualty Clearing Stn. (1/1st North Midland).	28. 2.15	
No. 54 Casualty Clearing Stn. (1/2nd London).	18. 3.15	
No. 55 Casualty Clearing Stn. (2/2nd London).	23. 6.16	
No. 56 Casualty Clearing Stn. (1/1st South Midland).	1. 4.15	
No. 57 Casualty Clearing Stn. (2/1st West Lancs.).	12. 2.17	
No. 58 Casualty Clearing Stn. (2/1st West Riding).	14. 4.15	
No. 59 Casualty Clearing Stn. (2/1st North Midland).	26. 2.17	
No. 61 Casualty Clearing Stn. (2/1st South Midland).	23. 5.16	

Unit.	Date of arrival.	Remarks.
No. 62 Casualty Clearing Stn. (2/1st Northumbrian).	10. 1.16	
No. 63 Casualty Clearing Stn. (1/1st London).	25. 1.17	
No. 64 Casualty Clearing Stn. (1/1st East Lancs.).	3. 3.17	
No. 1 Canadian Casualty Clearing Station.	3. 2.15	Arrived in England 14.10.14.
No. 2 ditto. ..	17. 9.15	Arrived in England 29.4.15.
No. 3 ditto. ..	6. 2.16	Arrived in England July 1915.
No. 4 ditto. ..	2. 6.17	Arrived in England 29.6.16.
No. 1 Australian Casualty Clearing Station.	5. 4.16	Came from Egypt.
No. 2 ditto. ..	? 6.16	First note of unit in France is in June 1916.
No. 3 ditto. ..	27. 9.16	
Meerut Casualty Clearing Station (No. 20).	12.10.14	Left 30.11.15 for Mesopotamia.
Lahore Casualty Clearing Station (No. 15).	14.10.14	Left 26.12.15 for Mesopotamia.
Lucknow Casualty Clearing Station.	10.11.14	Unit returned to India 6.3.19.

MOTOR AMBULANCE CONVOYS.

Unit.	Date of arrival.	Remarks.
No. 1 Motor Ambulance Convoy.	Formed in France.	Formed 28.9.14.
No. 2 ditto. ..		Formed 8.10.14 by B.R.C.S.
No. 3 ditto. ..		Formed 12.10.14.
No. 4 ditto. ..		Formed 25.10.14 by B.R.C.S.
No. 5 ditto. ..	5.11.14	Formed by Captain Du Cros.
No. 6 ditto. ..	13. 2.15	Formed by Captain Du Cros.
No. 7 ditto. ..	14. 1.15	Formed from cars presented by the Maharaja of Gwalior. Went to Salonika beginning of 1916.
No. 8 ditto. ..	27. 2.15	Formed from cars presented by the Scottish Branch of the B.R.C.S.
No. 9 ditto. ..	7. 5.15	Went to Salonika in January 1916.
No. 10 ditto. ..	13. 7.15	
No. 11 ditto. ..	24. 7.15	
No. 12 ditto. ..	13. 9.15	
No. 13 ditto. ..	25. 9.15	
No. 14 ditto. ..	4.10.15	
No. 15 ditto. ..	8.10.15	
No. 16 ditto. ..	24.10.15	B.R.C.S. Convoy.

Unit.	Date of arrival.	Remarks.
No. 20 Motor Ambulance Convoy.	14. 3.16	
No. 21 ditto. ..	14. 3.16	
No. 22 ditto. ..	14. 3.16	
No. 24 ditto. ..	5. 3.16	
No. 25 ditto. ..	6. 6.16	
No. 26 ditto. ..	20. 6.16	Went to Italy 19.11.17.
No. 27 ditto. ..	18. 5.16	
No. 30 ditto. ..	26. 7.16	
No. 31 ditto. ..	30. 7.16	
No. 36 ditto. ..	17. 4.17	
No. 37 ditto. ..	17. 4.17	
No. 42 ditto. ..	17. 2.18	
No. 43 ditto. ..	24. 4.18	
No. 44 ditto. ..	20. 4.18	
No. 47 ditto. ..	23.10.18	

AMBULANCE FLOTILLAS.

Unit.	Date of arrival.	Remarks.
No. 1 Ambulance Flotilla ..	Formed in France.	Four barges were formed in 1914 into a flotilla at Rouen by the British Water Ambulance Fund, privately financed, but the unit was absorbed into the Army and designated No. 1 Ambulance Flotilla at a later date. The Flotilla was demobilized in November 1915.
No. 2 ditto. ..	ditto.	Formed in April 1915.
No. 3* ditto. ..	ditto.	Formed in July 1915.
No. 4* ditto. ..	ditto.	Formed in October 1915.
No. 5 ditto. ..	ditto.	Formed in July 1916.

AMBULANCE TRAINS.

Unit.	By whom formed.	Date of first journey.	Remarks.
No. 1 Ambulance Train	Formed from French rolling stock in Aug. 1914.	24. 8.14	
No. 2 ditto.	ditto.	25. 8.14	
No. 3 ditto.	ditto.	26. 8.14	

* Nos. 3 and 4 Ambulance Flotillas were temporarily demobilized on 16.12.16 to March 1917, and again in November 1917 to March 1918.

Unit.		By whom formed.	Date of first journey.	Remarks.
No. 4 Ambulance Train		Formed from French rolling stock in Aug. 1914.	30. 8.14	
No. 5	ditto.	ditto.	16. 9.14	
No. 6	ditto.	ditto.	5. 9.14	
No. 7	ditto.	ditto in Sept. 1914.	20. 9.14	
No. 8	ditto.	ditto in Oct. 1914.	8.10.14	
No. 9	ditto.	ditto in Oct. 1914.	31.10.14	
No. 10	ditto.	ditto in Nov. 1914.	13.11.14	
No. 11	ditto.	ditto in Nov. 1914.	15.12.14	B.R.C.S. Train.
No. 12	ditto.	Formed of G.E. & L. & N.W. Rlys. rolling stock.	12.11.14	
No. 14	ditto.	L.B. & S.C. Rly. & L. & N.W. Rly.	26. 5.15	Gift of Lord and Lady Michelham; the part constructed by L. & N.W. Rly. being paid for by W.O.
No. 15	ditto.	B'ham. Carr. & Wagon Co.	1. 6.15	Presented by Princess Christian's Fund. This ambulance train proceeded to Italy on 9.11.17, but returned to B.E.F. 11.4.18.
No. 16	ditto.	G.W. Railway	24. 4.15	Presented by the United Kingdom Flour Millers' Association.
No. 17	ditto.	G.E. Railway	25. 4.15	Presented partly by the United Kingdom Flour Millers' Association, and completed by the War Office.
No. 18	ditto.	G.W. Railway	27. 9.15	Left for Italy on 14.11.17.
No. 19	ditto.	G.W. Railway	8. 2.16	
No. 20	ditto.	G.E. Railway	5. 1.16	
No. 21	ditto.	L. & N.W. Rly.	25. 8.15	Left for Italy on 17.11.17, but returned 31.5.18.
No. 22	ditto.	L. & N.W. Rly.	20. 8.15	Left for Italy 3.2.18, but returned 10.6.18.
No. 23	ditto.	Caledonian Rly.	3. 3.16	
No. 24	ditto.	L. & Y. Rly.	17. 9.15	
No. 25	ditto.	L.B.&S.C. Rly.	25. 3.16	
No. 26	ditto.	G.W. Railway	14. 5.16	Left for Italy on 18.11.17, but returned 30.1.18.
No. 27	ditto.	G.W. Railway	24. 6.16	

Unit.	By whom formed.	Date of first journey.	Remarks.
No. 28 Ambulance Train	G.E. Railway	10. 7.16	
No. 29 ditto.	L. & Y. Rly.	20. 4.16	
No. 30 ditto.	L. & N.W. Rly.	27. 5.16	Left for Italy on 30.1.18, but returned 28.6.18.
No. 31 ditto.	L. & N.W. Rly.	16. 6.16	Left for Italy on 20.2.18, but returned 7.7.18.
No. 32 ditto.	L. & N.W. Rly.	2. 9.17	
No. 33 ditto.	G.W. Railway	28. 8.17	
No. 34 ditto.	Midland Rly.	28. 9.17	
No. 35 ditto.	L. & S.W. Rly.	20.12.17	
No. 36 ditto.	G.E. Railway	12. 8.17	
No. 37 ditto.	N.E. Railway	25.11.17	
No. 38 ditto.	London Rly.	21. 7.17	Was in workshop from the middle of Sept. 1917 to Feb. 1918, and was demobilized in October 1918.
No. 39 ditto.	G.W. Railway	28. 1.18	Left for Italy on 17.6.18, but returned 4.11.19.
No. 41 ditto.	L. & N.W. Rly.	11.12.17	Left for Italy on 23.12.17, but returned 18.2.18. On 5.7.18 it again went to Italy, but returned later, 28.12.18
No. 42 ditto.	L. & Y. Rly.	16. 1.18	
No. 43 ditto.	G.W. Railway	3. 6.18	Left for Italy on 23.6.18, but returned 31.3.19.

GENERAL HOSPITALS.

Unit.	Date of arrival.	Remarks.
No. 1 General Hospital	20. 8.14	Taken over 16.7.17 by No. 2 (Presbyterian) U.S.A. Base Hospital Unit.
No. 2 ditto.	15. 8.14	
No. 3 ditto.	16. 8.14	
No. 4 ditto.	25. 8.14	
No. 5 ditto.	19. 8.14	
No. 6 ditto.	18. 8.14	
No. 7 ditto.	15. 8.14	No. 7 General Hospital was abandoned at Amiens during the retreat from Mons, and there was no No. 7 until 8.6.15, when the Malassise Hospital was designated No. 7.
No. 8 ditto.	22. 8.14	
No. 9 ditto.	22. 8.14	Taken over 1.7.17 by No. 4 (Cleveland) U S.A. Base Hospital.
No. 10 ditto.	22. 8.14	

Unit.	Date of arrival.	Remarks.
No. 11 General Hospital	25. 8.14	Taken over by No. 5. U.S.A. (Harvard) Base Hospital 4.7.17. On unit proceeding to Italy 15.11.17 the U.S.A. personnel were transferred to No. 13 General Hospital.
No. 12 ditto.	25. 8.14	Taken over by No. 21 (St. Louis) U.S.A. Base Hospital 9.7.17.
No. 13 ditto.	16.10.14	Taken over by No. 5 U.S.A. (Harvard) Base Hospital 2.11.17, as noted above.
No. 14 ditto.	16.10.14	
No. 16 ditto.	20. 2.15	Taken over by No. 10 (Philadelphia) U.S.A. Base Hospital June 1917.
No. 18 ditto.	24. 3.15	Taken over by No. 12 (Chicago) U.S.A. Base Hospital July 1917.
No. 20 ditto.	14. 5.15	
No. 22 ditto.	3. 6.15	Staffed by the Harvard Voluntary Medical Unit.
No. 23 ditto.	5. 6.15	Staffed by the Chicago Voluntary Medical Unit from 4.7.15. Unit handed over to No. 7 Canadian General Hospital on 15.11.16.
No. 24 ditto.	6. 6.15	
No. 25 ditto.	16. 6.15	
No. 26 ditto.	20. 6.15	
No. 30 ditto.	27. 3.16	Arrived from Palermo.
No. 35 ditto.	—	Originally the Lahore British General Hospital, the designation being changed on 1.5.16.
No. 39 ditto.	—	Originally No. 9 Stationary Hospital, the designation being changed on 23.6.16.
No. 47 ditto.	20. 3.17	
No. 51 ditto.	? 10.16	First diary of unit in France is for October 1916.
No. 53 (London) Gen. Hospital.	17. 4.17	Territorial Force unit.
No. 54 ditto.	17. 4.17	ditto.
No. 55 (Eastern) Gen. Hospital.	17. 4.17	ditto.
No. 56 (Southern) Gen. Hospital.	22. 4.17	ditto.
No. 57 (Western) Gen. Hospital.	21. 4.17	ditto.
No. 58 (Scottish) Gen. Hospital.	30. 4.17	ditto.
No. 59 (Northern) Gen. Hospital.	30. 4.17	ditto.
No. 72 General Hospital	3.12.17	
No. 73 ditto.	24. 1.18	
No. 74 ditto.	6. 3.18	
No. 81 ditto.	Feb. 1918	Came from Malta 19.12.17. The first diary of the unit is for February 1918.
No. 83 ditto.	—	This unit was originally No. 13 Stationary Hospital, designation being changed 23.5.17.

Unit.	Date of arrival.	Remarks.
No. 1 Canadian General Hospital.	14. 5.15	Disembarked in England 14.10.14 from Canada.
No. 2 ditto.	14. 3.15	Disembarked in England 15.10.14 from Canada.
No. 3 ditto.	18. 6.15	Disembarked in England 14.5.15 from Canada.
No. 6 ditto.	3. 7.16	
No. 7 ditto.	21. 4.16	Came from Egypt. Originally it was No. 5 Canadian Stationary Hospital there. Took over No. 23 British General Hospital 15.11.16.
No. 8 ditto.	—	*See* No. 4 Canadian Stationary Hospital. Designation changed 8.7.16.
No. 1 Australian Gen. Hospital.	5. 4.16	Came from Egypt.
No. 2 ditto.	1. 4.16	Came from Egypt.
No. 3 ditto.	14. 4.17	Was at Brighton 1.11.16 until it proceeded to France.
No. 1 South African General Hospital.	13. 7.16	
Lahore Indian General Hospital.	? 11.14	At Montreuil till March 1916, when two sections went to Rouen and remainder to Marseilles. The Rouen section became the Indian Section of No. 6 General Hospital on 22.10.19. With the Marseilles section was incorporated No. 9 Indian Convalescent Depôt from 25.8.16.
Meerut Indian General Hospital.	12.10.14	Disembarked at Marseilles, but reembarked 23.10.14 for England. Left England on 15.4.15 for France, arriving 23.4.15. Left France 31.12.15 for Mesopotamia.
Secunderabad Indian General Hospital.	7.11.14	Left 7.12.15 for Mesopotamia.
Lahore British General Hospital.	12.10.14	Became No. 35 General Hospital 1.5.16.
Meerut British General Hospital.	12.10.14	Became No. 25 Stationary Hospital in May 1916.
Rawalpindi British General Hospital.	7.11.14	Left 14.12.15 for Mesopotamia.

STATIONARY HOSPITALS.

Unit.	Date of arrival.	Remarks.
No. 1 Stationary Hospital.	20. 8.14	
No. 2 ditto.	14. 8.14	
No. 3 ditto.	20. 8.14	
No. 4 ditto.	27. 8.14	
No. 5 ditto.	15. 8.14	
No. 6 ditto.	27. 8.14	
No. 7 ditto.	15. 8.14	

Unit.	Date of arrival.	Remarks.
No. 8 Stationary Hospital.	27. 8.14	
No. 9 ditto.	15. 8.14	Became No. 39 General Hospital 23.6.16
No. 10 ditto.	15. 8.14	
No. 11 ditto.	27. 8.14	
No. 12 ditto.	27. 8.14	
No. 13 ditto.	13.10.14	Became No. 83 General Hospital 23.5.17.
No. 14 ditto.	11.10.14	
No. 25 ditto.	—	*See* Meerut General Hospital. Originally Meerut British General Hospital. Became No. 25 Stationary Hospital 11.5.16.
No. 27 ditto.	Formed in France.	Called Havre Isolation Hospital. Became part of No. 2 General Hospital in May 1916.
No. 28 ditto.	Formed in France.	Called Etaples Isolation Hospital. Became Isolation Block of No. 24 General Hospital in May 1916, and eventually No. 46 Stationary Hospital April 1917.
No. 32 ditto.	—	*See* Australian Voluntary Hospital. Called Australian Voluntary Hospital until 14.7.16, when it was converted into No. 32 Stationary Hospital.
No. 38 ditto.	21. 4.17	Went to Italy 16.11.17.
No. 39 ditto.	21. 4.17	
No. 40 ditto.	21. 4.17	
No. 41 ditto.	29. 4.17	
No. 42 ditto.	29. 4.17	
No. 46 ditto.	Formed in France.	Formed from the Isolation Block of No. 24 General Hospital in April 1917.
No. 52 ditto.	ditto.	Formed from a portion of No. 2 General Hospital on 1.3.18.
Stationary Hospital, Abancourt.	ditto.	Opened 11.8.17.
Stationary Hospital, Marseilles.	ditto.	Formed from a section of No. 39 General Hospital and the Marseilles Section of No. 2 Australian General Hospital, on 15.8.16.
Station Hospital, Paris.	ditto. 8. 6.18	
No. 1 Canadian Stationary Hospital.	3. 2.15	Arrived in England 14.10.14. Left on 30.7.15 for Salonika.
No. 2 ditto.	9.11.14	Arrived in England 14.10.14.
No. 3 ditto.	8. 4.16	Came from Egypt.
No. 4 ditto.	20.11.15	Became No. 8 Canadian General Hospital on 8.7.16.
No. 5 ditto.	? 4.16	Came from Egypt, becoming No. 7 Canadian General Hospital on arrival.
No. 7 ditto.	19. 6.16	
No. 8 ditto.	6.12.17	Was in England from 29.5.16.
No. 9 ditto.	5.12.17	
No. 10 ditto.	7.12.17	

Unit.	Date of arrival.	Remarks.
New Zealand Stationary Hospital.	14. 6.16	Came from Egypt.
The Meerut Stationary Hospital.	14.10.14	Left 20.12.15 for Mesopotamia.
The Lahore Stationary Hospital.	12.10.14	Left 27.3.16 for Mesopotamia.

VOLUNTARY HOSPITALS.

Unit.	Date of arrival.	Remarks.
No. 1 Red Cross Hospital, Le Touquet.	28. 9.14	Duchess of Westminster's Hospital.
No. 2 Red Cross Hospital, Rouen.	? 9.14	Opened 14.9.14.
No. 3 Red Cross Hospital, Abbeville.	? 10.14	Friends' Ambulance Unit.
No. 4 Red Cross Hospital, Wimereux.	? 11.14	Sir Henry Norman's Hospital. Opened 12.11.14.
No. 5 Red Cross Hospital, Wimereux.	2.12.14	Lady Hadfield's Anglo-American Hospital.
No. 6 Red Cross Hospital, Etaples.	27. 3.15	Liverpool Merchants' Hospital.
No. 7 Red Cross Hospital, Boulogne and Etaples.	? 10.14	Allied Forces Base Hospital. Opened 23.10.14.
No. 8 Red Cross Hospital, Calais and Paris Plage.	? 10.14	Baltic and Corn Exchange Hospital. Opened 24.10.14.
No. 9 Red Cross Hospital, Dunkirk and Calais.	? 11.14	Millicent Duchess of Sutherland's Hospital.
No. 10 B.R.C.S. Hospital, Le Treport.	? 11.14	Lady Murray's Hospital. Previous to June 1916 worked with the French Red Cross at Le Treport.
Australian Voluntary Aid Hospital, St. Nazaire and Wimereux.	29. 8.14	This became No. 32 Stationary Hospital 14.7.16.
St. John Ambulance Brigade Hospital, Etaples.	25. 7.15	
Scottish Red Cross Mobile Unit, Rouen.	Nov. 1914.	The unit was attached to No. 11 Stationary Hospital.
Queen Alexandra Hospital, Dunkirk.	? 1914	Friends' Ambulance Unit.
Malassise Hospital ..	Feb. 1915.	B.R.C.S. Formed in France Feb. 1915. Taken over by No. 7 General Hospital 8.6.15.

CONVALESCENT DEPÔTS.

Unit.	Date of arrival.	Remarks.
No. 1 Convalescent Depôt.	15. 8.14	
No. 2 ditto.	Formed in France.	First diary December 1914.
No. 3 ditto.	ditto.	First diary June 1915.
No. 4 ditto.	ditto.	First diary December 1914.
No. 5 ditto.	ditto.	Formed July 1915.
No. 6 ditto.	ditto.	Opened 11.6.15.
No. 7 ditto.	ditto.	Formed June 1915.
No. 8 Convalescent Home for British Officers.	Oct. 1915	Known as the Michelham Convalescent Home.
No. 10 Convalescent Depôt.	Formed in France.	Opened 12.4.17.
No. 11 ditto.	ditto.	Formed April 1917.
No. 12 ditto.	ditto.	Opened 23.6.17.
No. 13 ditto.	ditto.	Formed August 1917.
No. 14 ditto.	ditto.	Formed September 1917.
No. 15 ditto.	ditto.	Formed October 1917. Became subsequently a Prisoners of War Camp.
No. 16 ditto.	ditto.	Formed January 1918.
No. 8 Indian Convalescent Depôt.	ditto.	Opened 16.4.15 and closed 27.12.15.
No. 9 ditto.	ditto.	Opened 17.3.15.
Indian Convalescent Depôt, Rouen.	ditto.	First diary November 1914. Closed 17.4.15.

BASE DEPÔTS OF MEDICAL STORES.

Unit.	Date of arrival.	Remarks.
No. 1 Base Depôt Medical Stores.	22. 8.14	
No. 2 ditto.	22. 8.14	
No. 3 ditto.	22. 8.14	
No. 6 ditto.	10. 6.15	
No. 13 ditto.	?	First diary is for June 1917.

ADVANCED DEPÔTS OF MEDICAL STORES.

Unit.	Date of arrival.	Remarks.
No. 1 Advanced Depôt Medical Stores.	19. 8.14	
No. 2 ditto.	19. 8.14	
No. 3 ditto.	19. 8.14	

Unit.	Date of arrival.	Remarks.
No. 11 Advanced Depôt Medical Stores.	Formed in France.	First diary of unit is for July 1916.
No. 12 ditto.	ditto.	Formed 7.6.15.
No. 13 ditto.	ditto.	Formed 18.7.15.
No. 14 ditto.	ditto.	Formed 15.9.15.
No. 15 ditto.	ditto.	Formed 9.1.16.
No. 16 ditto.	ditto.	First diary of unit is for 28.2.16.
No. 17 ditto.	ditto.	Formed in March 1916. On the 28th 1918 it was captured by the Germans at Mont Notre Dame on the Aisne front.
No. 18 ditto.	ditto.	Formed in March 1916.
No. 19 ditto.	ditto.	Formed in May 1916.
No. 31 ditto.	ditto.	First diary of unit is for May 1916.
No. 32 ditto.	ditto.	Formed in January 1917. Left for Italy 8.11.17.
No. 33 ditto.	ditto.	First diary is for Feb. 1917.
No. 34 ditto.	ditto.	First diary is for March 1917.
No. 44 ditto.	ditto.	First diary is for Dec. 1919, when it was serving with the Army of the Rhine.
No. 2 Canadian Advanced Depôt Medical Stores.	11. 2.15	

Sanitary Sections.

Unit.	Date of arrival.	Remarks.
No. 1 Sanitary Section	14. 8.14	Left 3.12.17 for Italy, returning 16.3.18.
No. 2 ditto.	14. 8.14	
No. 3a ditto.	?	First diary is for Feb. 1916.
No. 4 ditto.	?	Left for Italy 6.11.17.
No. 4a ditto.	?	First diary is for Feb. 1916
No. 5a ditto.	?	First diary is for Jan. 1916.
No. 6 ditto.	?	First diary is for April 1916.
No. 7 ditto.	?	First diary is for Dec. 1915. Left for Salonika 1.1.16.
No. 8 ditto.	25.12.14	
No. 9 ditto.	25.12.14	
No. 10 ditto.	?	First diary is for August 1916.
No. 11 ditto.	?	First diary is for Jan. 1915.
No. 12 ditto.	?	First diary is for Jan. 1915.
No. 13 ditto.	?	First diary is for 8th April 1915.
No. 14 ditto.	?	First diary is for Jan. 1917. Left for Italy 3.11.17.
No. 16 ditto.	26. 3.16	Came from Egypt.
No. 17 ditto.	?	First diary is for August 1916.
No. 20 ditto.	?	First diary is for March 1916.
No. 21 ditto.	? 8.16	Came from Egypt.
No. 22 ditto.	12. 3.17	Came from Egypt.
No. 23 ditto.	2. 6.15	
No. 25 ditto.	23. 5.15	
No. 27 ditto.	3. 6.15	

Unit.	Date of arrival.	Remarks.
No. 32 Sanitary Section	?	First diary is for August 1915.
No. 33 ditto.	24. 7.15	
No. 34 ditto.	16. 7.15	
No. 35 ditto.	28. 7.15	
No. 36 ditto.	20. 7.15	Left for Italy in December 1917.
No. 37 ditto.	1. 8.15	Was absorbed into No. 87 Sanitary Section 3.2.19.
No. 38 ditto.	12. 9.15	
No. 39 ditto.	?	The first diary is for Sept. 1915. Went to Salonika in Nov. 1915.
No. 40 ditto.	28. 8.15	
No. 41 ditto.	3. 9.15	
No. 42 ditto.	?	First diary is for Jan. 1916.
No. 44 ditto.	?	First diary is for March 1916.
No. 45 ditto.	?	First diary is for July 1916.
47th (London) Divisional Sanitary Section	?	First diary is for Dec. 1915.
48th (S. Mid.) Divisional Sanitary Section	1. 4.15	
49th (W. Riding) Divisional Sanitary Section.	14. 4.15	
50th (Northumbrian) Divisional Sanitary Section.	21. 4.15	
51st (Highland) Divisional Sanitary Section.	May 1915	
52nd Divisional Sanitary Section.	17. 4.18	Came from Egypt.
55th ditto.	15. 1.16	
56th ditto.	6. 2.16	
57th ditto.	16. 2.16	Left for Italy 9.11.17. Returned 14.3.18.
58th ditto.	26. 1.17	
59th ditto.	27. 2.17	
60th ditto.	25. 6.16	Left for Salonika 1.12.16.
61st ditto.	26. 5.16	
62nd ditto.	12. 3.17	
63rd ditto.	31. 5.16	Formed in France.
66th (E. Lancs.) Divisional Sanitary Section.	2. 3.17	
No. 70 Sanitary Section	10.11.15	
No. 71 ditto.	3. 3.16	Came from Egypt.
No. 72 ditto.	25.11.15	
No. 73 ditto.	18.11.15	Left for Italy 16.11.17.
No. 74 ditto.	11. 1.16	
No. 75 ditto.	1. 2.16	
No. 76 ditto.	?	First diary is for Oct. 1915.
No. 77 ditto.	6.12.15	
No. 81 ditto.	19.12.15	
No. 82 ditto.	?	First diary is for March 1916.
No. 83 ditto.	7. 7.16	
No. 84 ditto.	5. 5.16	Left for Italy 7.11.17.
No. 87 ditto.	7. 5.18	Came from Egypt.

Unit.	Date of arrival.	Remarks.
No. 109 Sanitary Section.	28. 5.17	
No. 111 ditto.	1. 6.17	
No. 119 ditto.	4. 1.18	
No. 120 ditto.	?	First diary is for Dec. 1917.
1st London Sanitary Section.	? 15	First diary is for July 1916.
1st Canadian Divisional Sanitary Section.	7. 2.15	
2nd ditto.	17. 9.15	
3rd ditto.	?	First diary is for April 1916.
4th ditto.	?	First diary is for August 1916.
5th Canadian Sanitary Section.	6. 6.18	
1st Australian Sanitary Section.	25. 3.16	Came from Egypt.
2nd ditto.	3. 4.16	Came from Egypt.
3rd ditto.	23.11.17	
4th ditto.	8. 6.16	Came from Egypt.
5th ditto.	?	First diary is for August 1917.
1st N.Z. Divisional Sanitary Section.	16. 4.16	Came from Egypt.
1st Indian Cavalry Divisional Sanitary Section.	?	Was in France 1.6.15. Designated the 4th Cavalry Divisional Sanitary Section from October 1916. Left for Egypt in March 1918.
2nd Indian Cavalry Divisional Sanitary Section.	?	Was in France 31.5.16. Designated the 5th Cavalry Divisional Sanitary Section from October 1916. Left for Egypt in March 1918.
3rd Indian Divisional Sanitary Section (Lahore Division).	?	First diary in France June 1915. Left on 19.12.15 for Mesopotamia.
No. 4 Meerut Divisional Sanitary Section.	?	First diary is for May 1915. Left on 12.12.15 for Mesopotamia.

Mobile Laboratories.

Unit.	Date of arrival.	Remarks.
No. 1 Mobile Bact. Laboratory.	Oct. 1914.	First diary is for Feb. 1916.
No. 2 ditto.	Dec. 1914.	First diary is for July 1916.
No. 3 ditto.	Jan. 1915.	First diary is for July 1916.
No. 4 Mobile Hygiene Laboratory.	Nov. 1914.	First diary is for March 1916.
No. 5 Canadian Mobile Bact. Laboratory.	22. 3.15	
No. 6 Mobile Hygiene Laboratory.	20. 6.15	Re-numbered No. 15 in May 1916.
No. 7 Mobile Bact. Laboratory.	20. 6.15	Left for Italy 7.11.17.
No. 8 Mobile Bact. Laboratory.	20. 6.15	

Unit.	Date of arrival.	Remarks.
No. 9 Mobile Hygiene Laboratory.	4. 8.15	
No. 10 Mobile Bact. Laboratory.	Aug. 1915.	First diary is for Jan. 1916.
No. 11 ditto.	5. 8.15	
No. 12 Mobile Hygiene Laboratory.	19. 9.15	
No. 13 Mobile Bact. Laboratory.	19. 9.15	
No. 14 ditto.	Oct. 1915.	First diary is for Oct. 1915. Left for Italy 12.12.17.
No. 38 Welsh Divisional Mobile Bact. Laboratory.	3.12.15	Became No. 21 (Welsh) Bact. Laboratory, January 1916.
No. 15 Mobile Hygiene Laboratory.	*See* No. 6.	Left for Italy 7.11.17.
No. 16 Mobile Bact. Laboratory.	23. 4.16	
No. 17 ditto.	23. 4.16	
No. 18 ditto.	Mar. 1917.	
No. 19 ditto.	Apr. 1917.	
No. 20 ditto.	Jan. 1916.	First diary is for June 1916.
No. 21 ditto.	—	*See* No. 38 (Welsh Divisional) Mobile Bact. Laboratory.
No. 22 Mobile Hygiene Laboratory.	Mar. 1917.	First diary is for July 1917.
No. 23 ditto.	Mar. 1917.	Was in France in June 1917. Left for Italy in December 1917.
No. 33 ditto.	4. 1.18	
No. 39 ditto.	? 7.18	

Mobile X-ray Laboratories.

Unit.	Date of arrival.	Remarks.
No. 1 Mobile X-ray Laboratory.	? 1915	Formed in France.
No. 2 ditto.	? 1915	Presented by Cheltenham College, and called No. 2 (Cheltenham College) X-ray Laboratory.
No. 3 ditto.	18.10.16	
No. 4 ditto.	7.11.16	
No. 5 ditto.	?	First diary is for Dec. 1916.

Mobile Dental Units.

Unit.	Date of arrival.	Remarks.
No. 1 Mobile Dental Unit.	Oct. 1917	
No. 2 ditto.	18. 7.17	
No. 3 ditto.	10. 7.17	
No. 4 ditto.	? 10.17	
No. 5 ditto.	1. 4.18	

2.—MEDICAL UNITS WITH THE BRITISH EXPEDITIONARY FORCE IN ITALY.

Field Ambulances.

Unit.	Date of arrival.	Remarks.
No. 13 Field Ambulance.	Dec. 1917	Came with the 5th Division from France. Returned to France in April 1918.
No. 14 ditto.	ditto.	
No. 15 ditto.	ditto.	
No. 21 Field Ambulance.	Nov. 1917	Came with the 7th Division from France.
No. 22 ditto.	ditto.	
No. 23 ditto.	ditto.	
No. 69 Field Ambulance.	Nov. 1917	Came with the 23rd Division from France.
No. 70 ditto.	ditto.	
No. 71 ditto.	ditto.	
No. 138 Field Ambulance.	Nov. 1917	Came with the 41st Division from France. Returned to France at the beginning of March 1918.
No. 139 ditto.	ditto.	
No. 140 ditto.	ditto.	
1/1st S.M. Field Ambulance.	Nov. 1917	Came with the 48th (S. Midland) Division from France.
1/2nd ditto.	ditto.	
1/3rd ditto.	ditto.	

Casualty Clearing Stations.

Unit.	Date of arrival.	Remarks.
No. 9 Casualty Clearing Station.	11.11.17	Came from France.
No. 24 ditto.	22.11.17	Came from France.
No. 37 ditto.	7.12.17	Came from France. Returned to France on 24.4.18.
No. 38 ditto.	16.11.17	Came from France. Returned to France on 16.3.18.
No. 39 ditto.	26.11.17	Came from France.

Motor Ambulance Convoys.

Unit.	Date of arrival.	Remarks.
No. 26 Motor Ambulance Convoy.	24.11.17	Came from France.
No. 36 ditto.	11.11.17	Came from France.
No. 41 ditto.	15. 1.18	Came from the United Kingdom.

AMBULANCE TRAINS.

Unit.	Date of first journey.	Remarks.
No. 15 Ambulance Train	Dec. 1917	Came from France. Returned to France on 11.4.18.
No. 18 ditto.	Dec. 1917	Came from France.
No. 21 ditto.	2.12.17	Came from France. Returned to France on 31.5.18.
No. 22 ditto.	20. 2.18	Came from France. Returned to France on 10.6.18.
No. 26 ditto.	20.11.17	Came from France. Returned to France on 30.1.18.
No. 30 ditto.	2. 2.18	Came from France. Returned to France on 28.6.18.
No. 31 ditto.	24. 2.18	Came from France. Returned to France on 7.7.18.
No. 39 ditto.	19. 6.18	Came from France.
No. 41 ditto.	28.12.17	Came from France. Returned to France on 18.2.18. Went again to Italy on 5.7.18, where it remained until after the Armistice.
No. 43 ditto.	25. 6.18	Came from France.
No. 10 Italian Red Cross Ambulance Train.	27. 2.18	

GENERAL HOSPITALS.

Unit.	Date of arrival.	Remarks.
No. 11 General Hospital	20.11.17	Came from France.
No. 62 ditto.	23.11.17	Came from British Salonika Force.
No. 66 ditto.	9.12.17	Came from the British Salonika Force. Returned to Salonika 4.4.18.
No. 79 ditto.	—	Was known as the Military Hospital, Taranto, until 24.10.17.

STATIONARY HOSPITALS.

Unit.	Date of arrival.	Remarks.
No. 29 Stationary Hospital.	22.11.17	Came from British Salonika Force.
"B" Section No. 29 Stationary Hospital.	Formed in Italy.	Formed 15.4.18. Formerly known as the British Military Hospital, Turin.
No. 30 Stationary Hospital.	10.12.17	Came from the British Salonika Force. Returned to Salonika on 5.4.18.
No. 38 ditto.	21.11.17	Came from France.
No. 51 ditto.	3. 1.18	Was mobilized in Malta.

CONVALESCENT DEPÔTS.

Unit.	Date of arrival.	Remarks.
Convalescent Depôt, Italy.	29.11.17	Was mobilized at Rouen on 14.11.17. It was established first at Arquata, and then on 8.1.18 at Genoa.
Officers' Convalescent Home, Portofino.	Formed in Italy.	Formed on 21.7.18.

MISCELLANEOUS HOSPITALS.

Unit.	Date of arrival.	Remarks.
Native Labour Hospital, Taranto.	28. 6.17	Became No. 6 Native Labour Hospital, Taranto, in November 1917.
Native Hospital, Faenza	24. 6.17	
Military Hospital, Faenza.	14. 6.17	
Military Hospital, Taranto.	July 1917	*See* No. 79 General Hospital. Became No. 79 General Hospital on 24.10.17.
Station Hospital, Arquata.	5.11.17	Ceased to exist as such on 31.1.18.
Prisoners of War Hospital, Arquata.	3.11.18	

DEPÔTS OF MEDICAL STORES.

Unit.	Date of arrival.	Remarks.
No. 14 Base Depôt Medical Stores.	1.12.17	From the United Kingdom.
No. 32 Advanced Depôt Medical Stores.	12.11.17	Came from France.
No. 35 ditto.	17. 8.17	From the United Kingdom.
No. 36 ditto.	30.11.17	ditto.

MOBILE LABORATORIES.

Unit.	Date of arrival.	Remarks.
No. 7 Mobile Bact. Laboratory.	16.11.17	Came from France.
No. 14 ditto.	17.12.17	ditto.
No. 15 Mobile Hygiene Bact. Laboratory.	12.11.17	ditto.
No. 23 ditto.	Dec. 1917.	ditto.

Sanitary Sections.

Unit.	Date of arrival.	Remarks.
No. 1 Sanitary Section	8.12.17	Came from France. Returned to France on 11.3.18.
No. 4 ditto.	10.11.17	Came from France.
No. 14 ditto.	4.11.17	ditto.
No. 36 ditto.	16.12.17	ditto.
No. 57 ditto.	10.11.17	Came from France. Returned to France on 10.3.18.
No. 73 ditto.	1.12.17	Came from France.
No. 75 ditto.	1.12.17	ditto.
No. 84 ditto.	1.12.17	ditto.
No. 110 ditto.	8. 6.17	From the United Kingdom.
No. 112 ditto.	5. 6.17	ditto.

3.—MEDICAL UNITS WITH THE BRITISH EXPEDITIONARY FORCE IN EGYPT AND PALESTINE.

Field Ambulances.

Unit.	Period with Egyptian Expeditionary Force.	Remarks.
1/1st London Mtd. Bde. Field Ambulance.	Sept. 1914 to end.	Came to Egypt with T.F. Mtd. Bde. Designation changed March 1916 to 8th Mtd. Bde. F.A., and in July 1918 to 11th Cav. Bde. Comb. F.A.
1/1st South Midland Mtd. Bde. Field Ambulance.	April 1915 to end.	Came to Egypt with T.F. Mtd. Bde. Became 5th Mtd. Bde. F.A. in April 1916. Designation changed July 1918 to 13th Cav. Bde. Comb. F.A.
1/2nd South Midland Mtd. Bde. Field Ambulance.	April 1915 to end.	Came with T.F. Mtd. Bde. Became 6th Mtd. Bde. F.A. in November 1916, and 10th Cav. Bde. Comb. F.A. in July 1918.
1/1st Notts. and Derby Mtd. Bde. Field Ambulance.	Oct. 1915 to end.	Came to Egypt with T.F. Mtd. Bde. Became 7th Mtd. Bde. F.A. in April 1916, and the 14th Cav. Bde. Comb. F.A. in August 1918.
1/1st North Midland Mtd. Bde. Field Ambulance.	Nov. 1915 to end.	Came with T.F. Mtd. Bde. Became 22nd Mtd. Bde. F.A. in April 1916, and eventually the 12th Cav. Bde. Comb. F.A. in July 1918.
1/1st Scottish Horse Bde. Field Ambulance.	Dec. 1915 to end.	Came to Egypt with T.F. Mtd. Bde. Became Imperial Camel Corps F.A. January 1917. Designation changed again in August 1917 to original.

Unit.	Period with Egyptian Expeditionary Force.	Remarks.	
1/1st Eastern Mtd. Bde. Field Ambulance.	Dec. 1915 to end.	Came to Egypt with T.F. Mtd. Bde.	Amalgamated in March 1917 to form No. 230 Field Ambulance.
1/1st South Eastern Mtd. Bde. Field Ambulance.	Jan. 1916 to end.	Came to Egypt with T.F. Mtd. Bde.	
1/1st Highland Mtd. Bde. Field Ambulance	Dec. 1915 to end.	Came to Egypt with T.F. Mtd. Bde.	Amalgamated on 12.3.17 to form No. 229 Field Ambulance.
1/1st Lowland Mtd. Bde. Field Ambulance.	Jan. 1916 to end.	Came to Egypt with T.F. Mtd. Bde.	
1/2nd South Western Mtd. Bde. Field Ambulance.	Dec. 1915 to end.	Came to Egypt with T.F. Mtd. Bde.	
1/1st Welsh Border Mtd. Bde. Field Ambulance.	14. 3.16	Came to Egypt with T.F. Mtd. Bde. Its designation was changed 20.3.16 to 4th Dismounted Bde. Field Ambulance.	Amalgamated in March 1917 to form No. 231 Field Ambulance.
1st Australian Light Horse Field Ambulance.	?	Became field ambulances with the Australian and New Zealand Mounted Division on its formation 3.3.16.	
2nd ditto.	?		
N.Z. Mtd. Bde. Field Ambulance.	?		
3rd Australian Light Horse Field Ambulance.	?	Became field ambulances of the Imperial Mounted Division on its formation 12.2.17. Designation of division changed 20.6.17 to Australian Mounted Division.	
4th ditto.	?		
5th ditto.	?		
Mhow Cavalry Bde. Field Ambulance.	April 1918	Came with Indian Cavalry Divisions from France to Egypt in April 1918, but were amalgamated with other units shortly afterwards.	
Lucknow Cavalry Bde. Field Ambulance.	ditto.		
Sialkote Cavalry Bde. Field Ambulance.	ditto.		
Amballa Cavalry Bde. Field Ambulance.	ditto.		
Secunderabad Cavalry Bde.Field Ambulance.	ditto.		
Jodhpur Cavalry Bde. Field Ambulance.	ditto.		
10th Cavalry Bde. Comb. Field Ambulance.	—	*See* 1/2nd S.M. Mtd. Bde. Field Amb.	With 4th Cav. Div. Originally formed as Yeo. Div. in Egypt, June 1917. Became 1st Mtd. Div. 24.4.18, and 4th Cav. Div. 21.7.18.
11th ditto.	—	*See* 1/1st London Mtd. Bde. F.A.	
12th ditto.	—	*See* 1/1st N. Mid. Mtd. Bde. F.A.	

Unit.	Period with Egyptian Expeditionary Force.	Remarks.
13th Cavalry Bde. Comb. Field Ambulance.	—	*See* 1/1st S.M. Mtd. Bde. F.A. — With 5th Cav. Div. Originally formed in Egypt as 2nd Mtd. Div. in June 1918, but became 5th Cav. Div. 21.7.18.
14th ditto.	—	*See* 1/1st Notts. & Derby Mtd. Bde. F.A.
15th ditto.	—	*See* No. 124 Indian Cav. Field Amb.
No. 124 Indian Cavalry Field Ambulance.	Dec. 1914	Became 15th Cav. Bde. Comb. Field Ambulance in August 1918.
No. 30 Field Ambulance	30. 8.17 to end	Became No. 154 Indian Comb.F.A. 20.5.18
No. 31 ditto.	ditto.	Became No. 166 Indian Comb.F.A. 20.5.18 — Came with 10th Division from Salonika.
No. 32 ditto.	ditto.	Became No. 165 Indian Comb.F.A. 20.5.18
No. 33 ditto.	2. 2.16 to 28. 6.16	Came from Dardanelles with the 11th Division. Left Egypt for France.
No. 34 ditto.		
No. 35 ditto.		
No. 39 ditto.	15. 1.16 to 15. 2.16	Came with the 13th Division from Dardanelles. Left Egypt for Mesopotamia.
No. 40 ditto.		
No. 41 ditto.		
No. 87 ditto.	13. 1.16 to 15. 3.16	1/1st W. Lancs F.A. — Came with 29th Division from Dardanelles. Left Egypt for France.
No. 88 ditto.		1/1st E. Anglian F.A.
No. 89 ditto.	ditto.	1/1st Highland F.A.
No. 93 ditto.	22.12.15 to 28. 2.16	Came with 31st Division from England. Left Egypt for France.
No. 94 ditto.		
No. 95 ditto.		
1/1st E. Lancs. Field Ambulance.	25.9.14 to 5. 5.15	Came with 42nd Division from England. Went to Dardanelles. Returned to Egypt. Left Egypt for France.
1/2nd ditto.	ditto.	
1/3rd ditto.	31.1.16 to 3. 2.17	
1/1st Lowland Field Ambulance.	21.1.16 to 11. 4.18	Came with 52nd Division from Dardanelles. Left Egypt for France. The division before going to the Dardanelles was in Egypt between 3.6.15 and 17.6.15.
1/2nd ditto.	ditto.	
1/3rd ditto.	ditto.	
1/1st Welsh Field Ambulance.	14.12.15 to end.	
1/2nd ditto.	ditto.	Became No. 170 Indian Comb. F.A. 11.9.18. — Came from Dardanelles with the 53rd Division.
1/3rd ditto.	ditto.	Became No. 171 Indian Comb. F.A. 7.9.18.
No. 113 Indian Comb. Field Ambulance.	—	Attached to 53rd Division from 3.8.18. (*See* No. 113 Indian Comb. F.A.)

Unit.	Period with Egyptian Expeditionary Force.	Remarks.	
2/1st E. Anglian Field Ambulance	14.12.15 to end.	Came with 54th Division from Dardanelles.	
1/2nd ditto.	ditto.		
1/3rd ditto.	ditto.		
2/4th London Field Ambulance.	1. 6.17 to end.	Became No. 121 Indian Comb. F.A. 4.7.18.	
2/5th ditto.	ditto.	Became No. 160 Indian Comb. F.A. 4.7.18.	Came with 60th Division from Salonika.
2/6th ditto.	ditto.	Became No. 179 Indian Comb. F.A. 4.7.18.	
No. 229 Field Ambulance.	3.3.17 to 1. 5.18	*See* 1/1st Highland & 1/1st Lowland Mtd. Bde. Field Ambulances.	
No. 230 ditto.	ditto.	*See* 1/1st Eastern and 1/1st S. Eastern Mtd. Bde. Field Ambulances.	With the 74th Division. Left Egypt for France.
No. 231 ditto.	ditto.	*See* 1/2nd South Western and 4th Dismounted Bde. Field Ambulances.	
No 145 ditto.	25. 6.17 to end	Became No. 123 Indian Comb. F.A. May 1918.	
No. 146 ditto.	ditto.	Became No. 127 Indian Comb. F.A. May 1918.	With the 75th Division formed in Egypt.
No. 147 ditto.	ditto.	Became No. 163 Indian Comb. F.A. May 1918.	
No. 1 Australian Field Ambulance.	3.12.14 to 10.4.15	Came with the 1st Australian Division from Australia. Went to Dardanelles	
No. 2 ditto.	31.12.15 to 22.3.16	Returned to Egypt. Left Egypt for France.	
No. 3 ditto.			
No. 5 ditto.	1.8.15 to 31.8.15	With the 2nd Australian Division, formed in Egypt. Went to Dardanelles. Returned to Egypt. Left Egypt for France.	
No. 6 ditto.			
No. 7 ditto.	8.1.16 to 16.3.16		
No. 4 ditto.	14.2.16 to June 1916	With the 4th Australian Division formed in Egypt. Left Egypt for France.	
No. 12 ditto.			
No. 13 ditto.	ditto.		
No. 8 ditto.	14. 2.16 to 18. 6.16	With the 5th Australian Division, formed in Egypt. Left Egypt for France.	
No. 14 ditto.	ditto.		
No. 15 ditto.	ditto.		

Unit.	Period with Egyptian Expeditionary Force.	Remarks.
No. 1 New Zealand Field Ambulance.	9. 1.15 to 15. 4.15	With the New Zealand and Australian Division, formed in Egypt. Went to Dardanelles. Returned to Egypt. Became the New Zealand Division 1.3.16. Left Egypt for France.
No. 2 ditto.	ditto.	
No. 3 ditto.	31.12.15 to 6. 4.16	
No. 105 Indian Field Ambulance.	Dec. 1914.	With the 10th Indian Division, which was formed in Egypt in December 1914, but was broken up 17.2.16.
No. 108 ditto.	ditto.	
No. 135 ditto.	ditto.	
No. 121 ditto.	ditto.	Became No. 121 Indian Comb. F.A. June 1918.
No. 122 ditto.	ditto.	With the 11th Indian Division, which was formed in Egypt December 1914, but was broken up in January 1916.
No. 137 ditto.	—	A section went to Salonika in January 1916.
No. 110 ditto.	Dec. 1914.	Became No. 157 Indian Field Ambulance in June 1918. Two sections went to Salonika January 1916.
No. 123 ditto.	Dec. 1914.	Became No. 123 Indian Comb. Field Ambulance in May 1918.
No. 110 Indian Comb. Field Ambulance.	14. 4.18 to end.	Field ambulances of the 3rd (Lahore) Division which came from Mesopotamia.
No. 111 ditto.	ditto.	
No. 112 ditto.	ditto.	
No. 113 ditto.	ditto.	Attached to 53rd Division from 3.7.18.
No. 127 ditto.	7. 1.18 to end.	Field ambulances of the 7th (Meerut) Division. No. 127 Indian Comb. Field Ambulance took over from No. 146 Field Ambulance of 75th Division in May 1918.
No. 128 ditto.	ditto.	
No. 129 ditto.	ditto.	
No. 130 ditto.	ditto.	

CASUALTY CLEARING STATIONS.

Unit.	Date of arrival.	Remarks.
No. 11 Casualty Clearing Station.	Jan. 1916.	Came from Dardanelles. Went to France 21.4.16.
No. 13 ditto.	Feb. 1916.	Went to France 5.7.16.
No. 14 ditto.	Jan. 1916.	Went to East Africa 22.4.16.
No. 16 ditto.	Jan. 1916.	Went to Mesopotamia 18.2.16.
No. 24 ditto.	Jan. 1916.	Went to France 3.3.17.
No. 26 ditto.	Dec. 1915.	

Unit.	Date of arrival.	Remarks.
No. 31 Casualty Clearing Station.	Oct. 1915.	Arrived from United Kingdom, but proceeded to British Salonika Force in November 1915.
No. 35 ditto.	Jan. 1916.	Arrived from United Kingdom. Went to France 21.4.16, but returned in July 1917. Went to Salonika April 1918.
No. 52 ditto.	Jan. 1916.	Came from Dardanelles. Proceeded to East Africa 22.4.16.
No. 53 ditto.	Dec. 1915.	Came from Dardanelles. It was redesignated No. 65 C.C.S. in July 1917.
No. 54 ditto.	Jan. 1916.	Came from Dardanelles. Re-designated No. 66 C.C.S., 15.7.17.
No. 65 ditto.	—	*See* No. 53 C.C.S. Became No. 34 Combined Clearing Hospital 5.6.18.
No. 66 ditto.	—	*See* No. 54 C.C.S.
No. 74 ditto.	June 1917.	Arrived from United Kingdom.
No. 75 ditto.	May 1917.	Arrived from United Kingdom. Disbanded 14.6.18 and became No. 32 Combined Clearing Hospital.
No. 76 ditto.	Aug. 1917.	
No. 77 ditto.	Aug. 1917.	Disbanded 5.6.18 and became No. 33 Combined Clearing Hospital.
No. 15 Combined Clearing Hospital.	June 1918.	
No. 32 ditto.	—	*See* No. 75 C.C.S.
No. 33 ditto.	—	*See* No. 77 C.C.S.
No. 34 ditto.	—	*See* No. 65 C.C.S.
No. 24 Indian Clearing Hospital.	? Mar 1918	First diary of unit in Egypt March 1918.
No. 31 ditto.	8. 5.18	
Indian Clearing Hospital Ismailia.	27. 1.15	The war diaries for this unit only extend to December 1915.

MOTOR AMBULANCE CONVOY.

Unit.	Date of arrival.	Remarks.
No. 35 Motor Ambulance Convoy.	Mar. 1917 to end.	

AMBULANCE TRAINS.

Unit.	Date of formation.	Remarks.
No. 1 (44) Hospital Train.	Dec. 1914.	Previously formed of Indian personnel as No. 1 Ambulance Train until April 1916. It became No. 44 Ambulance Train 3.3.18.
No. 2 (45) ditto.	ditto.	Previously formed of Indian personnel as No. 2 Ambulance Train until April 1916. It became No. 45, 8.3.18.

Unit.	Date of formation.	Remarks.
No. 3 (46) Hospital Train.	ditto.	Previously formed of Indian personnel as No. 3 Ambulance Train until April 1916. It became No. 46 in March 1918.
No. 4 } (47) ditto.	? Jan. 1915	Formed in Egypt beginning of 1915.
No. 5 } (47) ditto.	ditto.	Formed in Egypt 1915. Became No. 47 in March 1918.
No. 6 (48) ditto.	1.12.16	Formed in Egypt and became No. 43 on 18.1.18 until 1.2.18, when its designation was again changed to No. 48.
No. 7 (49) ditto.	11.12.16	Formed in Egypt. Became No. 44 on 14.1.18 until 3.3.18, when its designation was again changed to No. 49.
No. 8 (50) ditto.	27. 4.17	Formed in Egypt. It became No. 45 on 14.1.18 until 3.2.18, when designation was changed to No. 50.
No. 9 (51) ditto.	17. 6.17	Formed in Egypt. It became No. 46 on 14.1.18 to 3.2.18, when designated No. 51.
No. 10 (56) ditto.	8.10.17	Formed in Egypt. It became No. 56 on 14.1.18 for Egyptians and P. of W.
No. 11 (57) ditto.	?	Formed in Egypt. Became No. 57 for Egyptians and P. of W.
No. 40 ditto.	11. 4.18	Arrived from United Kingdom.

General Hospitals.

Unit.	Date of arrival.	Remarks.
No. 15 General Hospital	Mar. 1915.	Arrived from the United Kingdom. Went to British Salonika Force April 1918.
No. 17 ditto.	Mar. 1915.	Arrived from the United Kingdom.
No. 19 ditto.	9. 6.15	ditto.
No. 21 ditto.	May 1915.	ditto.
No. 27 ditto.	15. 2.16	Arrived from the Dardanelles.
No. 31 ditto.	Dec. 1915.	Arrived from the United Kingdom.
No. 69 ditto.	19. 8.17	ditto.
No. 70 ditto.	Aug. 1917.	Formed in Egypt. Disbanded 22.6.18.
No. 71 ditto.	Aug. 1917.	Formed in Egypt.
No. 78 ditto.	Aug. 1917.	ditto.
No. 87 ditto.	Oct. 1918.	ditto.
No. 88 ditto.	? Dec. 1918	Was the Nasrieh Military Hospital until 12.12.18.
No. 1 Australian Gen. Hospital.	Dec. 1914.	Went to France at the end of March 1916.
No. 2 ditto.	Jan. 1915.	ditto. ditto.
No. 3 ditto.	Jan. 1916.	Went to France September 1916.
No. 14 ditto.	Sept. 1916.	
New Zealand General Hospital.	Dec. 1914.	Absorbed into No. 2 New Zealand Stationary Hospital 26.7.15.

Unit.	Date of arrival.	Remarks.
Bombay Presidency Voluntary General Hospital.	Dec. 1914.	Went to India in April 1916.
No. 5 Indian General Hospital.	Dec. 1914.	
No. 8 ditto.	Dec. 1914.	Went to Mesopotamia in April 1916.
No. 39 ditto.	June 1918.	Came from Mesopotamia.
No. 41 ditto.	May 1918.	
No. 44 ditto.	May 1918.	
No. 45 ditto.	June 1918.	Took over from No. 70 General Hospital 22.6.18.
No. 50 ditto.	?	Was the Indian Base Hospital until the end of May 1918.
No. 51 ditto.	? June 1918	

STATIONARY HOSPITALS.

Unit.	Date of arrival.	Remarks.
No. 18 Stationary Hospital.	Jan. 1916.	Came from Mudros. Left for British Salonika Force 27.12.16.
No. 24 ditto.	June 1916.	Came from the United Kingdom. It relieved No. 1 New Zealand Stationary Hospital.
No. 26 ditto.	June 1916.	Came from the United Kingdom.
No. 36 ditto.	Jan. 1917.	Came from the United Kingdom.
No. 43 ditto.	July 1917.	Formed in Egypt. It was disbanded in June 1918.
No. 44 ditto.	July 1917.	Formed in Egypt.
No. 45 ditto.	July 1917.	Formed in Egypt. Went to British Salonika Force 9.5.18.
No. 47 ditto.	Aug. 1917.	Came from the United Kingdom.
No. 48 ditto.	Aug. 1917.	Came from the United Kingdom.
No. 1 Canadian Stationary Hospital.	Feb. 1916.	Came from Mudros. It only stayed in Egypt for about one month. Went to Salonika.
No. 3 ditto.	12. 8.15	Went to France March 1916.
No. 5 ditto.	12. 8.15	Left for France March 1916.
No. 1 Australian Stationary Hospital.	Jan. 1915.	Went to Dardanelles March 1915. Returned end of 1915 to Egypt, and became No. 3 Australian Auxiliary Hospital August 1916.
No. 2 ditto.	Jan. 1915.	Went to Dardanelles in April 1915, returning January 1916.
No. 1 New Zealand Stationary Hospital.	Mar. 1916.	Came from Salonika. Went to France June 1916.
No. 137 Indian Stationary Hospital.	Mar. 1918.	
No. 16 British Stationary Hospital.	Jan. 1916.	Was a unit from India. Came to Egypt from Mudros. Went to India in May 1916.

Unit.	Date of arrival.	Remarks.
No. 1 Egyptian Stationary Hospital.	Formed in Egypt.	Was formerly No. 6 Egyptian Hospital until October 1918.
No. 2 ditto.	ditto.	First diary is for August 1918.
No. 3 ditto.	ditto.	
No. 4 ditto.	ditto.	
No. 5 ditto.	ditto.	First diary is for August 1918.
No. 6 ditto.	ditto.	Became No. 1 Egyptian Hospital in October 1918.

CONVALESCENT DEPÔTS.

Unit.	Date of arrival.	Remarks.
Convalescent Depôt, Abbassia.	Nov. 1915.	Formed in Egypt.
Convalescent Depôt, Boulac.	Nov. 1915.	ditto.
Convalescent Depôt, Montazzah.	Aug. 1915.	ditto.
Convalescent Depôt, Mustapha.	May 1915.	ditto.
Indian Convalescent Depôt.	?	
Luxor Convalescent Depôt.	Nov. 1915.	ditto.
New Zealand Convalescent Home.	?	ditto.

MISCELLANEOUS HOSPITALS.

Unit.	Date of arrival.	Remarks.
Citadel Military Hospital, Cairo.	—	Military Hospital previous to the war. Became Citadel General Hospital, Cairo, in June 1916.
Military Hospital, Ras el Tin.	—	Military Hospital previous to the war.
Choobra Infectious Hospital.	April 1915.	Formed in Egypt.
Nasrieh Military Hospital.	July 1915.	Formed in Egypt. Became No. 88 General Hospital 12.12.18.
B.R.C.S. Hospital, Gizeh.	25. 5.15	Formed in Egypt. Closed 8.7.18.

Unit.	Date of arrival.	Remarks.
No. 1 Egyptian Detention Hospital.	Formed in Egypt. (No diaries were rendered by these units.)	Stationed on Palestine L. of C.
No. 2 ditto.		Stationed at Alexandria.
No. 3 ditto.		Stationed on Palestine L. of C.
No. 4 ditto.		ditto.
No. 5 ditto.		ditto.
No. 6 ditto.		ditto.
No. 7 ditto.		ditto.
No. 8 ditto.		ditto.
No. 9 ditto.		ditto.
No. 10 ditto.		ditto.
No. 11 ditto.		ditto.
No. 12 ditto.		ditto.
No. 13 ditto.		Stationed with the Force in Egypt.
No. 14 ditto.		Stationed at Alexandria. Was formerly No. 5 Egyptian Stationary Hospital.

Unit.	Remarks.
No. 1 Prisoners of War Hospital	Formed in Egypt.
No. 2 ditto. ditto.	ditto.
No. 3 ditto. ditto.	ditto.
No. 4 ditto. ditto.	ditto.
No. 5 ditto. ditto.	ditto.
No. 6 ditto. ditto.	ditto.
No. 7 ditto. ditto.	ditto.
No. 8 ditto. ditto.	ditto.
No. 9 ditto. ditto.	ditto.
No. 10 ditto. ditto.	ditto.

Depôts of Medical Stores.

Unit.	Date of arrival.	Remarks.
Army Medical Store, Cairo.	—	In Egypt before the war. Remained open throughout.
No. 4 Base Depôt Medical Stores.	Mar. 1915	Came from U.K. Became the Levant Base Depôt in December 1915, and continued as such.
No. 5 ditto.	Mar. 1915	Came from the United Kingdom.
No. 8 ditto.	?Apr. 1916	First diary of unit, April 1916.
No. 4 Advanced Depôt Medical Stores.	Mar. 1915	Arrived from U.K. Handed over to the Levant Base Depôt 2.6.16. Re-formed at Alexandria 10.8.17.
No. 5 ditto.	Jan. 1916	Arrived from Dardanelles.
No. 6 ditto.	Dec. 1915	ditto.
No. 7 ditto.	ditto.	ditto.
No. 8 ditto.	ditto.	Amalgamated with the Levant Base Depôt in April 1916. Re-formed in October 1917.

SANITARY SECTIONS.

Unit.	Date of arrival.	Remarks.
No. 16 Sanitary Section.	Mar. 1915	Came from the United Kingdom. Went to the Dardanelles 3.5.15, returning Jan. 1916. Went to France 16.3.16.
No. 18 ditto.	Mar. 1915	Came from the United Kingdom. Went to the Dardanelles May 1915, returning to Egypt June 1916.
No. 19 ditto.	?	The first diary is for November 1917.
No. 24 ditto.	?	The first diary is for May 1917.
No. 29 ditto.	?	The first diary is for January 1916.
No. 30 ditto.	?	The first diary is for January 1917.
No. 31 ditto.	?	The first diary is for August 1916. It was formerly the 4th Indian Cavalry Sanitary Section.
No. 46 ditto.	Sept. 1915	Went to Mesopotamia 30.9.16.
52nd Divisional Sanitary Section.	June 1915	Went to Dardanelles 21.7.15, returning to Egypt. Went to France 6.4.18.
53rd ditto.	Dec. 1915	Came from the Dardanelles.
54th ditto.	?	The first diary is for July 1916.
60th ditto.	July 1917	Came from Salonika.
No. 71 Sanitary Section.	1. 1.16	Came from the United Kingdom. Left for France 2.3.16.
No. 80 ditto.	Dec. 1915	Came from the United Kingdom.
No. 85 ditto.	Mar. 1916	Came from the United Kingdom.
No. 87 ditto.	?	First diary is for April 1917. Went to France 1.5.18.
No. 88 ditto.	Mar. 1916	Came from the United Kingdom.
No. 89 ditto.	ditto.	ditto.
No. 90 ditto.	ditto.	ditto.
No. 91 ditto.	ditto.	ditto.
No. 92 ditto.	?	First diary is for May 1919.
No. 93 ditto.	?	First diary shows it as being in Egypt in September 1917.
No. 94 ditto.	Mar. 1916	Came from the United Kingdom.
No. 95 ditto.	20. 2.17	Formed in Egypt.
No. 107 ditto.	June 1917	Came from the United Kingdom.
No. 108 ditto.	May 1917	ditto.
No. 113 ditto.	Aug. 1917	ditto.
No. 114 ditto.	Mar. 1917	ditto.
No. 115 ditto.	Oct. 1917	ditto.
No. 116 ditto.	Sept. 1917	ditto.
No. 121 ditto.	May 1918	ditto.
No. 122 ditto.	ditto.	ditto.
No. 123 ditto.	ditto.	ditto.
No. 124 ditto.	ditto.	ditto.
No. 7 Australian Sanitary Section.	?	
No. 8 ditto.	?	
No. 11 Indian Sanitary Section.	6. 5.18	Came from Mesopotamia.
No. 12 ditto.	22. 1.18	ditto.
5th Cavalry Divisional Sanitary Section.	?	Formerly the 5th Indian Cavalry Divisional Sanitary Section. Came from France.

MOBILE LABORATORIES.

Unit.	Date of arrival.	Remarks.
Military Bacteriological Laboratory.	?	Formerly the Central Bacteriological Laboratory.
No. 1 Military Laboratory.	Mar. 1917	Formed in Egypt.
No. 2 ditto.	ditto.	
No. 3 ditto.	ditto.	
No. 4 ditto.	3. 3.17	
No. 5 ditto.	Feb. 1917	Formerly Railway Car Laboratory.
No. 6 ditto.	Mar. 1917	Formed in Egypt.
Railway Car Laboratory	May 1915	Formed by the Department of Public Health. Became No. 5 Military Laboratory in February 1917.
No. 32 Mobile Bacteriological Laboratory.	23. 3.18	Came from the United Kingdom.

APPENDIX B.

CASUALTIES DURING THE SOMME BATTLES, 1916.

APPROXIMATE TOTALS AND DISPOSAL OF CASUALTIES.

Month.	Army.	Wounded admitted to Field Ambulances.		Wounded evacuated to Casualty Clearing Stations.		Wounded evacuated to Ambulance Trains.	
		Officers.	Other ranks.	Officers.	Other ranks.	Officers.	Other ranks.
July	Fourth Army	3,725	100,142	3,459	96,385	3,676	95,709
	Reserve Army	535	15,535	428	10,910	378	10,230
	Third Army (VIIth Corps)	3,355		2,775		3,600 (from army)	
	Totals	4,260	115,677	3,887	107,295	4,054	105,939
	Grand Totals ..	123,292		113,957		113,593	
August	Fourth Army	1,014	25,459	932	23,175	854	22,716
	Reserve Army	527	16,214	576	15,479	547	13,865
	Totals	1,541	41,673	1,508	38,654	1,401	36,581
	Grand Totals ..	43,214		40,162		37,982	
September	Fourth Army	2,253	55,035	2,243	52,808	1,138	52,938
	Reserve Army	806	23,746	804	23,648	740	22,241
	Totals	3,059	78,781	3,047	76,456	1,878	75,179
	Grand Totals ..	81,940		79,503		77,057	
October	Fourth Army	971	24,589	952	22,206	892	21,766
	Reserve Army	493	13,465	496	13,673	537	13,378
	Totals	1,464	38,054	1,448	35,879	1,429	35,144
	Grand Totals ..	39,518		37,327		36,573	
November	Fourth Army	345	8,681	322	8,065	323	8,409
	Fifth Army	712	18,371	697	15,229	650	14,776
	Totals	1,057	27,052	1,019	23,294	973	23,185
	Grand Totals ..	28,109		24,313		24,158	
	GRAND TOTALS ..	316,073		295,262		289,363	

Daily Admissions to Field Medical Units of the Fourth Army.

Date July	Wounded admitted. To F.As. Off.	To F.As. O.R.	To C.C.Ss. Off.	To C.C.Ss. O.R.	Wounded evacuated. To A.T. Off.	To A.T. O.R.	To T.A.T. Off.	To T.A.T. O.R.	To Barges. Off.	To Barges. O.R.	To M.A.C. Off.	To M.A.C. O.R.	To Buses. Off.	To Buses. O.R.	Total. Off.	Total. O.R.
1st	526	14,146	528	7,236	152 (5)	2,165	—	—	—	—	—	—	—	—	152	2,165
2nd	554	15,767	459	16,672	443 (14)	7,187	13 (4)	3,625	21 (4)	99	21 (4)	1,434	— (2)	709	498	13,054
3rd	254	7,881	269	10,204	207 (17)	8,455	58 (6)	4,836	122 (10)	178	18 (5)	883	8 (1)	165	413	14,517
4th	97	2,592	111	3,525	151 (14)	4,088	37 (3)	2,114	48 (4)	72	— (2)	339	—	—	236	6,613
5th	83	1,968	66	1,672	100 (8)	3,229	—	—	13 (4)	107	—	—	—	—	113	3,336
6th	72	1,433	93	1,141	52 (4)	1,751	—	—	9 (4)	111	—	—	—	—	61	1,862
7th	80	3,233	142	2,569	50 (2)	942	— (1)	947	24 (4)	96	—	—	—	—	74	1,985
8th	115	2,587	80	2,807	48 (4)	1,879	16 (1)	1,059	36 (4)	84	—	—	—	—	100	3,022
9th	65	1,866	62	1,625	67 (5)	2,215	—	—	2 (2)	58	—	—	—	—	69	2,273
10th	120	2,535	106	2,308	125 (4)	2,241	—	—	12 (4)	108	—	—	—	—	137	2,349
11th	88	2,748	89	2,538	83 (4)	2,162	— (1)	1,006	26 (6)	154	—	—	—	—	109	3,322
12th	46	1,476	43	1,526	64 (4)	1,927	—	—	15 (2)	45	—	—	—	—	79	1,972
13th	34	1,046	32	1,237	36 (4)	1,947	—	—	9 (4)	111	—	—	—	—	45	2,058
14th	182	5,395	161	5,119	36 (3)	1,530	29 (2)	2,047	18 (6)	162	—	—	—	—	83	3,739
15th	185	4,925	189	4,734	130 (6)	2,475	7 (3)	2,330	6 (2)	54	—	—	—	—	143	4,859
16th	108	2,665	94	2,864	201 (7)	3,038	—	—	31 (4)	89	—	—	—	—	232	3,127
17th	38	1,372	27	1,474	31 (3)	1,180	— (1)	918	12 (4)	108	8 (Sick)	165	—	—	51	2,371
18th	70	1,678	70	1,517	68 (2)	772	— (1)	593	8 (2)	52	—	—	—	—	76	1,417
19th	94	2,306	89	2,808	89 (4)	1,717	— (1)	1,094	20 (4)	99	—	—	—	—	109	2,910
20th	142	2,803	124	2,997	81 (3)	1,556	— (1)	962	14 (4)	106	—	—	—	—	95	2,624
21st	65	1,486	59	1,726	86 (4)	1,915	—	—	16 (2)	44	—	—	—	—	102	1,959
22nd	65	1,191	62	1,177	59 (4)	1,969	—	—	7 (2)	53	—	—	—	—	66	2,022
23rd	146	4,169	128	4,050	65 (5)	2,987	— (1)	901	70 (8)	170	—	—	—	—	135	4,058
24th	52	1,337	43	1,448	73 (4)	1,736	—	—	14 (2)	60	—	—	—	—	87	1,796
25th	78	1,421	55	1,426	55 (4)	2,219	—	—	8 (2)	52	—	—	—	—	63	2,271
26th	38	1,083	31	1,155	46 (2)	959	—	—	30 (6)	150	—	—	—	—	76	1,109
27th	46	1,567	50	1,322	40 (3)	1,656	—	—	6 (2)	54	—	—	—	—	46	1,710
28th	72	1,806	54	2,158	65 (3)	1,728	—	—	20 (4)	100	—	—	—	—	85	1,828
29th	39	1,023	35	1,012	58 (2)	1,128	—	—	13 (6)	167	—	—	—	—	71	1,295
30th	90	2,441	78	2,310	78 (5)	2,737	—	—	10 (2)	50	—	—	—	—	88	2,787
31st	81	2,196	80	2,028	97 (5)	2,447	—	—	15 (2)	45	—	—	—	—	112	2,492
	3,725	100,142	3,509	96,385	2,936	73,937	160	22,432	655	2,838	47	2,821	8	874	3,806	102,902*

* Includes Sick and 592 Germans.

Note.—Died of wounds in field ambulances and casualty clearing stations—178 officers and 2,739 other ranks.
Discharged to duty from ditto ditto 57 ,, 1,362 ,,
Total wounded evacuated to the base .. .. 3,406 ,, 89,735 ,,

Date Aug.	Wounded admitted.				Wounded evacuated.											
	To F.As.		To C.C.Ss.		To A.T.		To T.A.T.		To Barges.		To M.A.C.		To Buses.		Total.	
	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.
1st	38	784	34	705	42 (2)	856	—	—	19 (6)	161	—	—	—	—	61	1,017
2nd	27	660	32	661	32 (2)	1,008	—	—	13 (4)	107	—	—	—	—	45	1,115
3rd	28	565	23	563	70 (3)	1,068	—	—	—	—	—	—	—	—	70	1,068
4th	31	674	31	607	15 (1)	467	—	—	13 (4)	107	—	—	—	—	28	574
5th	26	691	19	624	44 (3)	1,305	—	—	13 (2)	47	—	—	—	—	57	1,352
6th	29	621	20	556	18 (1)	450	—	—	8 (2)	52	—	—	—	—	26	502
7th	23	581	17	527	35 (2)	825	—	—	16 (4)	104	—	—	—	—	51	929
8th	53	1,135	46	1,094	62 (3)	1,089	—	—	9 (2)	51	—	—	—	—	71	1,140
9th	52	1,166	49	1,106	23 (1)	477	—	—	14 (6)	166	—	—	—	—	37	643
10th	22	603	20	543	39 (2)	1,020	—	—	— (2)	60	—	—	—	—	39	1,080
11th	26	514	22	439	30 (2)	761	—	—	5 (2)	55	—	—	—	—	35	816
12th	10	446	12	442	20 (1)	505	—	—	10 (2)	50	—	—	—	—	30	555
13th	55	1,047	48	943	51 (3)	1,630	—	—	14 (2)	46	—	—	—	—	65	1,676
14th	14	415	19	400	22 (1)	436	—	—	27 (4)	93	—	—	—	—	49	529
15th	15	456	18	421	47 (2)	812	—	—	8 (2)	52	—	—	—	—	55	864
16th	22	614	18	565	33 (1)	414	—	—	12 (2)	48	—	—	—	—	45	462
17th	55	1,361	52	1,303	33 (3)	1,272	—	—	9 (2)	51	—	—	—	—	42	1,323
18th	62	2,309	49	1,597	63 (4)	1,757	—	—	38 (4)	82	—	—	—	—	101	1,839
19th	126	2,713	119	2,864	111 (6)	3,020	—	—	— (2)	60	—	—	—	—	111	3,080
20th	31	830	30	775	38 (2)	796	—	—	11 (6)	180	—	—	—	—	49	976
21st	24	741	25	627	50 (3)	1,300	—	—	6 (2)	54	—	—	—	—	56	1,354
22nd	30	675	28	661	13 (1)	334	—	—	13 (2)	47	—	—	—	—	26	381
23rd	10	358	11	350	25 (1)	452	—	—	1 (2)	59	—	—	—	—	26	511
24th	21	731	24	669	38 (1)	821	—	—	19 (6)	161	—	—	—	—	57	982
25th	61	1,370	51	966	35 (2)	994	—	—	15 (4)	105	—	—	—	—	50	1,099
26th	26	522	25	601	42 (2)	762	—	—	—	—	—	—	—	—	42	762
27th	17	439	17	379	15 (1)	489	—	—	19 (4)	101	—	—	—	—	34	590
28th	13	589	16	508	32 (3)	902	—	—	13 (2)	47	—	—	—	—	45	949
29th	22	584	25	577	30 (2)	840	—	—	10 (2)	50	—	—	—	—	40	890
30th	16	405	10	512	13 (1)	493	—	—	11 (4)	109	—	—	—	—	24	602
31st	29	840	22	590	37 (2)	980	—	—	—	—	—	—	—	—	37	980
	1,014	25,439	932	23,175	1,158	28,335	—	—	346	2,305	—	—	—	—	1,504	30,640*

* Includes "Sick": 650 officers and 8,004 other ranks, and 292 wounded Germans.
Total sick admitted during the month: To F.As. 859 officers and 18,782 other ranks.
To C.C.Ss. 737 ,, ,, 11,400 ,,
Died of wounds in F.As., 41 officers and 403 other ranks. In C.C.Ss., 38 officers, 793 other ranks. Total, 79 officers, 1,196 other ranks.
Discharged to duty from F.As., 42 officers and 2,012 other ranks. From C.C.Ss., 12 officers, 688 other ranks. Total, 54 officers, 2,700 other ranks.
Note.—The figures in parentheses indicate the number of trains or barges employed on any one day.

Date	Wounded admitted.				Wounded evacuated.											
	To F.As.		To C.C.Ss.		To A.T.		To T.A.T.		To Barges.		To M.A.Cs.		To Buses.		Total.	
Sept.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.	Off.	O.R.
1st	48	1,377	45	1,286	66 (3)	1,434	—	—	15 (4)	105	—	—	—	—	81	1,539
2nd	46	1,146	45	984	57 (4)	1,745	—	—	9 (2)	51	—	—	—	—	66	1,796
3rd	57	2,733	68	1,953	70 (3)	1,356	—	—	5 (2)	55	—	—	—	—	75	1,411
4th	146	2,801	146	3,792	145 (9)	5,009	—	—	29 (6)	151	—	—	—	—	174	5,160
5th	80	1,432	59	1,257	126 (5)	2,357	—	—	15 (2)	45	—	—	—	—	141	2,402
6th	53	1,192	45	903	61 (3)	1,176	—	—	—	—	—	—	—	—	61	1,176
7th	70	1 070	54	1,041	55 (3)	1,373	—	—	—	—	—	—	—	—	55	1,373
8th	32	860	37	783	96 (4)	1,661	—	—	4 (2)	56	—	—	—	—	100	1,717
9th	52	1,278	37	1,028	75 (3)	1,524	—	—	16 (6)	164	—	—	—	—	91	1,688
10th	172	3,189	166	3,209	109 (5)	2,812	—	—	1 (2)	59	—	—	—	—	110	2,871
11th	40	1,426	35	1,192	112 (4)	1,828	—	—	6 (4)	120	—	—	—	—	118	1,948
12th	47	955	34	889	25 (1)	508	—	—	2 (6)	178	—	—	—	—	27	686
13th	20	798	29	475	70 (4)	1,914	—	—	—	—	—	—	—	—	70	1,914
14th	40	1,141	37	930	55 (3)	1,317	—	—	10 (4)	110	—	—	—	—	65	1,427
15th	318	6,659	237	4,337	36 (1)	605	24 (2)	1,814	—	—	—	—	—	—	60	2,419
16th	270	8,462	405	10,402	309 (9)	3,712	57 (2)	1,763	15 (4)	105	—	490	—	*1,103	381	7,173
17th	101	2,729	138	3,709	296 (12)	5,367	7 (1)	953	13 (8)	227	—	†840	—	—	316	7,387
18th	123	2,109	94	2,322	86 (6)	2,873	(Germans 25)		—	—	—	—	—	—	86	2,873
19th	50	860	61	774	87 (5)	2,146	—	—	— (4)	119	—	—	—	—	87	2,265
20th	27	799	31	803	69 (4)	1,706	—	—	3 (4)	117	—	—	—	—	72	1,823
21st	24	683	24	610	86 (3)	1,452	—	—	—	—	—	—	—	—	86	1,452
22nd	35	730	38	746	55 (3)	1,429	—	—	—	—	—	—	—	—	55	1,429
23rd	25	619	23	625	60 (3)	1,460	—	—	7 (2)	53	—	—	—	—	67	1,513
24th	26	607	20	619	59 (3)	1,483	—	—	—	—	—	—	—	—	59	1,483
25th	67	2,230	76	1,729	86 (4)	1,867	—	—	—	—	—	—	—	—	86	1,867
26th	146	3,587	116	3,265	136 (7)	3,723	—	—	—	—	—	—	—	—	136	3,723
27th	55	1,398	58	1,231	75 (4)	1,910	—	—	—	—	—	—	—	—	75	1,910
28th	38	1,035	41	920	36 (3)	1,222	—	—	3 (2)	57	—	—	—	—	39	1,279
29th	21	508	14	450	42 (2)	691	—	—	—	—	—	—	—	—	42	691
30th	24	622	30	544	49 (2)	819	—	—	—	—	—	—	—	—	49	819
	2,253	55,035	2,243	52,808	2,689	58,479	88	4,530	153	1,772	—	1,330	—	1,103	2,930	67,214‡

* 366 of these were from Heilly and Edgehill to Gézaincourt. † To casualty clearing stations of Reserve Army.
‡ Includes "Sick": 792 officers and 14,276 other ranks, and 1,976 wounded Germans.
Total sick admitted .. To F.As., officers 1,020, other ranks 27,043. To C.C.Ss., officers 884, other ranks 15,062.
Sick discharged to duty .. ,, 193 ,, ,, 9,679. ,, 77 ,, ,, 1,122.
Wounded discharged to duty .. ,, 66 ,, ,, 2,954. ,, 30 ,, ,, 665.
Died of wounds in F.As. .. ,, 34 ,, ,, 517. ,, 132 ,, ,, 1.724.

Date Oct.	Wounded admitted. To F.As. Off.	To F.As. O.R.	To C.C.Ss. Off.	To C.C.Ss. O.R.	Wounded evacuated. To A.T. Off.	To A.T. O.R.	To T.A.T. Off.	To T.A.T. O.R.	To Barges. Off.	To Barges. O.R.	To M.A.C. Off.	To M.A.C. O.R.	To Buses. Off.	To Buses. O.R.	Total. Off.	Total. O.R.
1st	48	929	42	703	46 (2)	887	—	—	—	—	—	—	—	—	46	877
2nd	68	1,579	63	1,508	97 (4)	1,825	—	—	10 (2)	50	—	—	—	—	107	1,875
3rd	22	562	24	535	41 (2)	804	—	—	17 (2)	43	—	—	—	—	58	847
4th	19	495	20	524	68 (3)	1,324	—	—	— (2)	60	—	—	—	—	68	1,384
5th	22	473	15	427	—	—	—	—	11 (4)	109	—	—	—	—	11	109
6th	25	583	20	516	49 (3)	1,125	—	—	—	—	—	—	—	—	49	1,125
7th	34	1,297	40	848	48 (2)	952	—	—	—	—	—	—	—	—	48	952
8th	128	2,571	129	2,622	131 (6)	2,913	—	—	3 (4)	117	—	—	—	—	134	3,030
9th	55	1,261	60	1,081	63 (3)	1,119	—	—	3 (2)	57	—	—	—	—	66	1,176
10th	18	696	22	665	89 (4)	1,521	—	—	—	—	—	—	—	—	89	1,521
11th	13	646	14	545	43 (3)	1,113	—	—	—	—	—	—	—	—	43	1,113
12th	28	1,285	25	1,058	26 (2)	743	—	—	—	—	—	—	—	—	26	743
13th	100	2,378	105	2,222	120 (7)	3,030	—	—	—	—	—	—	—	—	120	3,030
14th	21	676	22	641	36 (2)	677	—	—	—	—	—	—	—	—	36	677
15th	27	615	20	429	15 (1)	285	—	—	5 (2)	55	—	—	—	—	20	340
16th	14	357	21	375	39 (2)	791	—	—	14 (2)	46	—	—	—	—	53	837
17th	6	247	6	303	15 (1)	294	—	—	—	—	—	—	—	—	15	294
18th	41	1,314	32	913	57 (4)	1,646	—	—	—	—	—	—	—	—	57	1,646
19th	31	546	30	578	30 (2)	840	—	—	—	—	—	—	—	—	30	840
20th	17	537	16	466	28 (1)	414	—	—	—	—	—	—	—	—	28	414
21st	23	437	13	444	55 (4)	1,589	—	—	—	—	—	—	—	—	55	1,589
22nd	26	403	39	400	25 (1)	318	—	—	—	—	—	—	—	—	25	318
23rd	24	726	23	481	66 (3)	1,317	—	—	—	—	—	—	—	—	66	1,317
24th	59	1,388	50	1,430	85 (5)	2,166	—	—	—	—	—	—	—	—	85	2,166
25th	20	486	22	508	48 (3)	1,082	—	—	—	—	—	—	—	—	48	1,082
26th	16	504	20	552	38 (2)	711	—	—	— (2)	60	—	—	—	—	38	77
27th	15	293	9	300	12 (1)	500	—	—	—	—	—	—	—	—	12	500
28th	26	412	18	367	45 (3)	1,182	—	—	—	—	—	—	—	—	45	1,182
29th	13	362	19	355	26 (1)	448	—	—	—	—	—	—	—	—	26	448
30th	6	244	8	213	34 (2)	810	—	—	—	—	—	—	—	—	34	810
31st	6	287	5	197	20 (1)	601	—	—	—	—	—	—	—	—	20	601
	971	24,589	952	22,206	1,495	33,017	—	—	63	597	—	—	—	—	1,558	33,614*

* Includes "Sick": Officers 666, other ranks 11,948, and German wounded 667.
Total sick admitted: To F.As., officers 825, other ranks 25,377. To C.C.Ss., officers 766, other ranks 14,613.
Sick discharged to duty: From F.As. „ 156 „ „ 10,527. From C.C.Ss., „ 94 „ „ 1,651.
Died of wounds: Officers 18, other ranks 285 in F.As.
„ 68 „ „ 918 in C.C.Ss.
Note.—Figures in parentheses indicate the total number of trains or barges on any one day.

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Date Nov.	Wounded admitted. To F.As. Off.	To F.As. O.R.	To C.C.Ss. Off.	To C.C.Ss. O.R.	Wounded evacuated. To A.T. Off.	To A.T. O.R.	To T.A.T. Off.	To T.A.T. O.R.	To Barges. Off.	To Barges. O.R.	To M.A.C. Off.	To M.A.C. O.R.	To Buses. Off.	To Buses. O.R.	Total. Off.	Total. O.R.
1st	17	407	16	340	35 (2)	806	—	—	—	—	—	—	—	—	35	806
2nd	12	482	9	427	55 (2)	956	—	—	—	—	—	—	—	—	55	956
3rd	12	367	11	262	60 (4)	1,687	—	—	—	—	—	—	—	—	60	1,687
4th	14	297	13	365	42 (3)	1,267	—	—	—	—	—	—	—	—	42	1,267
5th	30	902	18	358	23 (2)	901	—	—	—	—	—	—	—	—	23	901
6th	42	868	44	1,004	61 (4)	2,034	—	—	—	—	—	—	—	—	61	2,034
7th	9	402	10	538	29 (2)	802	—	—	—	—	—	—	—	—	29	802
8th	16	239	14	176	36 (3)	1,272	—	—	—	—	—	—	—	—	36	1,272
9th	17	367	18	331	52 (3)	1,508	—	—	—	—	—	—	—	—	52	1,508
10th	14	228	14	275	44 (3)	1,359	—	—	—	—	—	—	—	—	44	1,359
11th	5	257	7	257	6 (1)	582	—	—	—	—	—	—	—	—	6	582
12th	10	236	2	162	33 (3)	1,170	—	—	—	—	—	—	—	—	33	1,170
13th	13	343	17	250	23 (1)	441	—	—	—	—	—	—	—	—	23	441
14th	19	481	6	311	36 (2)	935	—	—	—	—	—	—	—	—	36	935
15th	23	660	33	793	71 (4)	1,675	—	—	—	—	—	—	—	—	71	1,675
16th	10	322	15	361	9 (1)	397	—	—	—	—	—	—	—	—	9	397
17th	10	291	14	275	17 (1)	349	—	—	—	—	—	—	—	—	17	349
18th	10	157	6	162	30 (2)	957	—	—	—	—	—	—	—	—	30	957
19th	8	153	5	140	38 (1)	451	—	—	—	—	—	—	—	—	38	451
20th	5	177	9	175	26 (3)	1,351	—	—	—	—	—	—	—	—	26	1,351
21st	7	179	9	228	38 (2)	884	—	—	—	—	—	—	—	—	38	884
22nd	4	101	1	127	13 (1)	393	—	—	—	—	—	—	—	—	13	393
23rd	11	138	13	113	16 (1)	450	—	—	—	—	—	—	—	—	16	450
24th	7	151	5	141	11 (1)	546	—	—	—	—	—	—	—	—	11	546
25th	2	116	1	108	56 (2)	951	—	—	—	—	—	—	—	—	56	951
26th	—	45	3	74	34 (2)	711	—	—	—	—	—	—	—	—	34	711
27th	5	100	1	101	32 (2)	843	—	—	—	—	—	—	—	—	32	843
28th	5	109	9	116	4 (1)	503	—	—	—	—	—	—	—	—	4	503
29th	4	55	1	56	47 (3)	1,275	—	—	—	—	—	—	—	—	47	1,275
30th	4	51	3	39	22 (2)	799	—	—	—	—	—	—	—	—	22	799
	345	8,681	327	8,065	999	28,255	—	—	—	—	—	—	—	—	999	28,255*

* Includes "Sick": Officers 676, other ranks 19,846, and 161 Germans.
Total sick admitted .. To F.As., officers 812, other ranks 33,904. To C.C.Ss., officers 809, other ranks 22,955.
Sick discharged to duty From F.As. „ 104 „ „ 10,364. From C.C.Ss. „ 100 „ „ 1,900.
Wounded „ „ „ „ 9 „ „ 531. „ „ „ — „ „ 249.
Died of wounds: In F.As., officers 11, other ranks 136. In C.C.Ss., officers 24, other ranks 459.

APPENDIX C.

DAILY ADMISSIONS TO FIELD AMBULANCES AND CASUALTY CLEARING STATIONS DURING THE ADVANCE TO VICTORY.

First Army.

Period 6 *a.m. to* 6 *a.m.*

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Aug. 8	1	40	41	—	7	136	143	4
,, 9	6	57	63	—	10	117	127	—
,, 10	1	57	58	—	8	141	149	3
,, 11	1	104	105	—	7	243	250	—
,, 12	—	49	49	—	6	111	117	—
,, 13	1	35	36	2	5	96	101	2
,, 14	3	148	151	—	3	168	171	1
,, 15	6	150	156	—	9	185	194	—
,, 16	3	152	155	—	4	214	218	—
,, 17	5	97	102	—	6	86	92	—
,, 18	10	43	53	—	7	61	68	—
,, 19	2	90	92	1	6	109	115	3
,, 20	4	141	145	—	3	170	173	4
,, 21	3	134	137	—	9	171	180	2
,, 22	7	201	208	3	9	229	238	6
,, 23	9	253	262	—	9	277	286	—
,, 24	12	302	314	10	15	334	349	11
,, 25	6	218	224	3	11	334	345	3
,, 26	51	1,405	1,456	92	62	1,570	1,632	118
,, 27	56	1,186	1,242	130	143	3,308	3,451	225
,, 28	59	1,087	1,146	109	107	1,943	2,050	108
,, 29	17	415	432	8	24	665	689	23
,, 30	41	960	1,001	62	45	1,056	1,101	44
,, 31	44	521	565	20	31	768	799	29
Sept. 1	33	699	732	79	48	990	1,038	80
,, 2	116	2,711	2,827	395	211	3,613	3,824	362
,, 3	37	968	1,005	41	79	2,417	2,496	460
,, 4	22	475	497	56	44	857	901	84
,, 5	40	1,168	1,208	—	45	745	790	1
,, 6	26	578	604	—	37	710	747	—
,, 7	9	403	412	1	27	943	970	4
,, 8	8	222	230	—	18	450	468	—
,, 9	3	206	209	—	7	242	249	—

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Sept. 10	3	162	165	—	12	172	184	—
,, 11	10	199	209	—	8	273	281	—
,, 12	13	265	278	—	8	213	221	—
,, 13	7	186	193	—	8	221	229	—
,, 14	18	408	426	1	15	440	455	1
,, 15	25	358	383	—	30	421	451	—
,, 16	10	319	329	—	21	455	476	3
,, 17	10	269	279	4	14	321	335	4
,, 18	11	186	197	—	10	214	224	1
,, 19	7	99	106	1	12	184	196	4
,, 20	4	78	82	1	19	199	218	5
,, 21	7	178	185	—	1	174	175	—
,, 22	3	131	134	—	13	214	227	—
,, 23	5	145	150	1	6	133	139	5
,, 24	8	165	173	1	15	259	274	1
,, 25	2	129	131	—	2	224	226	—
,, 26	4	68	72	—	10	131	141	1
,, 27	85	1,607	1,692	434	218	4,282	4,500	379
,, 28	113	2,045	2,158	520	94	2,033	2,127	380
,, 29	75	2,021	2,096	47	74	2,415	2,489	23
,, 30	84	1,833	1,917	85	92	1,425	1,517	130
Oct. 1	80	1,986	2,066	58	102	2,173	2,275	105
,, 2	44	1,022	1,066	207	29	512	541	203
,, 3	26	528	554	10	20	420	440	13
,, 4	5	310	315	—	15	340	355	6
,, 5	7	157	164	—	4	270	274	1
,, 6	2	100	102	4	10	194	204	1
,, 7	13	263	276	13	18	252	270	6
,, 8	6	159	165	3	18	252	270	6
,, 9	18	407	425	41	24	470	494	37
,, 10	23	334	357	41	29	330	359	14
,, 11	23	435	458	14	56	1,261	1,317	7
,, 12	40	1,074	1,114	—	38	1,578	1,616	76
,, 13	6	1,512	1,518	32	48	947	995	20
,, 14	42	1,014	1,056	9	39	1,289	1,328	7
,, 15	29	1,369	1,398	—	9	261	270	2
,, 16	7	387	394	—	7	238	245	—
,, 17	11	211	222	—	7	164	171	1
,, 18	18	227	245	3	29	403	432	8
,, 19	4	170	174	2	10	215	225	4
,, 20	6	166	172	2	9	223	232	3
,, 21	12	207	219	—	8	140	148	8
,, 22	9	181	190	3	12	256	268	3
,, 23	6	155	161	1	9	109	118	2
,, 24	33	419	452	43	25	304	329	102
,, 25	25	581	606	11	33	649	682	16
,, 26	23	680	703	18	24	510	534	30
,, 27	9	170	179	11	6	158	164	13
,, 28	11	171	182	16	9	204	213	12
,, 29	6	136	142	2	18	269	287	4
,, 30	6	159	165	2	10	129	139	1
,, 31	6	177	183	1	4	175	179	1

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Nov. 1	48	1,080	1,128	198	59	1,334	1,393	186
„ 2	28	478	506	92	37	570	607	175
„ 3	17	334	351	7	12	252	264	46
„ 4	19	233	252	13	26	381	407	13
„ 5	17	349	366	11	8	390	398	11
„ 6	22	408	430	24	31	470	501	24
„ 7	17	352	369	6	18	343	361	4
„ 8	16	386	402	5	14	333	347	7
„ 9	6	112	118	2	9	148	157	4
„ 10	9	311	320	2	8	249	257	2
„ 11	12	110	122	2	13	216	229	9
„ 12	3	166	169	1	3	141	144	2
„ 13	1	6	7	—	—	20	20	—
„ 14	—	12	12	—	1	10	11	—
„ 15	1	4	5	—	—	4	4	—
„ 16	—	—	—	—	—	1	1	—
„ 17	—	—	—	—	—	—	—	—
„ 18	1	—	1	—	—	—	—	—
„ 19	—	8	8	—	—	1	1	—
„ 20	—	2	2	—	—	—	—	—
„ 21	—	—	—	—	—	—	—	—
„ 22	—	—	—	—	—	—	—	—
„ 23	—	—	—	—	—	—	—	—
„ 24	—	1	1	—	—	—	—	—
„ 25	—	—	—	—	—	2	2	—
„ 26	—	—	—	—	—	—	—	—
„ 27	—	—	—	—	—	—	—	—
„ 28	—	—	—	—	—	—	—	—
„ 29	—	—	—	—	—	—	—	—
„ 30	—	—	—	—	—	—	—	—

SECOND ARMY.

Period 6 *a.m. to* 6 *a.m.*

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Aug. 8	6	209	215	2	13	301	314	3
„ 9	12	288	300	4	12	352	364	1
„ 10	2	120	122	—	2	108	110	1
„ 11	10	107	117	2	8	119	127	2
„ 12	4	142	146	8	5	151	156	7
„ 13	7	181	188	—	9	133	142	—
„ 14	19	347	366	—	15	289	304	—
„ 15	7	156	163	1	9	137	146	1
„ 16	12	284	296	3	17	255	272	3
„ 17	8	194	202	—	12	187	199	—
„ 18	23	574	597	65	20	582	602	80
„ 19	12	274	286	8	12	380	392	18
„ 20	6	305	311	23	7	209	216	28
„ 21	12	351	363	22	14	302	316	24
„ 22	11	245	256	1	12	280	292	2
„ 23	10	202	212	1	18	269	287	2
„ 24	12	258	270	10	13	347	360	10
„ 25	5	228	233	—	9	212	221	2
„ 26	4	102	106	1	4	110	114	1
„ 27	13	201	214	6	14	225	239	7
„ 28	3	80	83	2	6	136	142	2
„ 29	3	42	45	—	3	72	75	—
„ 30	8	70	78	—	5	44	49	1
„ 31	5	117	122	2	5	130	135	—
Sept. 1	13	197	210	1	12	231	243	6
„ 2	18	384	402	3	17	374	391	4
„ 3	20	465	485	5	23	356	379	—
„ 4	47	1,173	1,220	46	53	1,205	1,258	44
„ 5	11	327	338	19	13	355	368	16
„ 6	28	671	699	7	33	634	667	9
„ 7	31	383	414	5	31	409	440	8
„ 8	12	231	243	4	10	254	264	6
„ 9	4	75	79	1	4	107	111	—
„ 10	—	73	73	—	2	89	91	—
„ 11	2	108	110	—	4	94	98	—
„ 12	4	114	118	—	4	99	103	—
„ 13	2	75	77	2	1	57	58	2
„ 14	4	69	73	—	4	60	64	—
„ 15	3	159	162	3	6	170	176	—
„ 16	2	114	116	—	5	104	109	1
„ 17	6	91	97	3	2	71	73	3
„ 18	9	138	147	9	10	157	167	7
„ 19	4	121	125	—	4	107	111	2
„ 20	5	82	87	—	4	65	69	—
„ 21	3	60	63	—	4	97	101	—
„ 22	2	83	85	—	3	58	61	—
„ 23	3	60	63	—	5	81	86	—
„ 24	9	104	113	1	10	102	112	—

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Sept. 25	3	159	162	—	5	92	97	1
,, 26	10	176	186	—	9	215	224	—
,, 27	7	174	181	1	6	155	161	5
,, 28	71	1,684	1,755	134	87	1,955	2,042	170
,, 29	92	1,398	1,490	120	75	1,449	1,529	59
,, 30	61	1,254	1,315	43	38	1,004	1,042	43
Oct. 1	46	1,290	1,336	11	59	1,102	1,161	73
,, 2	56	1,229	1,285	19	49	1,120	1,169	23
,, 3	20	593	613	5	28	610	638	14
,, 4	7	214	221	4	9	301	310	4
,, 5	12	226	238	—	14	236	250	2
,, 6	8	217	225	—	17	192	209	—
,, 7	4	129	133	—	10	137	147	—
,, 8	4	129	133	—	10	137	147	—
,, 9	14	177	191	—	19	179	198	1
,, 10	6	129	135	—	5	154	159	—
,, 11	15	154	169	—	15	166	181	—
,, 12	3	192	195	—	6	143	149	2
,, 13	4	132	136	—	7	188	195	—
,, 14	101	3,086	3,187	309	112	2,831	2,943	302
,, 15	35	1,029	1,064	109	37	920	957	115
,, 16	18	278	296	27	25	425	450	10
,, 17	18	258	276	3	15	245	260	16
,, 18	17	137	154	—	13	131	144	3
,, 19	10	187	197	—	9	287	296	3
,, 20	40	742	782	61	38	636	674	52
,, 21	35	503	538	19	19	425	444	22
,, 22	27	568	595	15	36	627	663	21
,, 23	15	301	316	11	19	457	476	17
,, 24	9	222	231	7	7	181	188	6
,, 25	46	870	916	25	32	346	378	19
,, 26	5	168	173	9	37	750	787	23
,, 27	5	63	68	6	4	82	86	6
,, 28	2	47	49	—	9	104	113	1
,, 29	6	130	136	3	4	174	178	3
,, 30	5	146	151	1	6	124	130	1
,, 31	28	643	671	113	33	616	649	110
Nov. 1	8	158	166	37	7	140	147	37
,, 2	3	110	113	—	3	110	113	1
,, 3	—	17	17	—	—	18	18	—
,, 4	—	36	36	2	2	45	47	1
,, 5	2	44	46	1	—	42	42	1
,, 6	6	115	121	—	6	117	123	—
,, 7	8	90	98	—	5	105	110	—
,, 8	2	34	36	—	5	57	62	—
,, 9	2	22	24	—	4	40	45	—
,, 10	—	7	7	1	2	10	12	—
,, 11	1	1	2	—	2	14	16	—
,, 12	—	—	—	—	1	6	7	—
,, 13	—	—	—	—	2	5	7	1
,, 14	—	—	—	—	—	8	8	—

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Nov. 15	—	—	—	—	—	7	7	—
,, 16	—	—	—	—	—	—	—	—
,, 17	—	—	—	—	—	1	1	—
,, 18	—	—	—	—	—	—	—	—
,, 19	—	—	—	—	—	—	—	—
,, 20	—	—	—	—	—	—	—	—
,, 21	—	—	—	—	—	—	—	—
,, 22	—	—	—	—	—	—	—	—
,, 23	—	—	—	—	—	7	7	—
,, 24	—	—	—	—	—	3	3	—
,, 25	—	—	—	—	—	—	—	—
,, 26	—	—	—	—	—	—	—	—
,, 27	—	—	—	—	—	—	—	—
,, 28	—	—	—	—	—	—	—	—
,, 29	—	—	—	—	—	—	—	—
,, 30	—	—	—	—	—	—	—	—

THIRD ARMY.

Period 6 *a.m. to* 6 *a.m.*

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Aug. 8	6	93	99	—	4	86	90	—
,, 9	3	85	88	—	7	58	65	—
,, 10	2	56	58	—	1	59	60	—
,, 11	1	73	74	—	2	71	73	—
,, 12	2	46	48	—	2	66	68	—
,, 13	5	94	99	—	4	84	88	—
,, 14	6	87	93	1	11	59	70	1
,, 15	10	230	240	4	8	241	249	4
,, 16	9	146	155	12	9	125	134	14
,, 17	2	72	74	3	2	66	68	3
,, 18	2	100	102	4	2	92	94	4
,, 19	4	65	69	—	3	53	56	—
,, 20	6	106	112	—	5	51	56	—
,, 21	196	4,069	4,265	161	182	3,344	3,526	183
,, 22	71	2,034	2,105	78	76	2,221	2,297	108
,, 23	205	4,818	5,023	438	204	3,631	3,835	219
,, 24	91	2,280	2,371	266	67	3,550	3,617	508
,, 25	129	3,499	3,628	341	131	3,734	3,865	241
,, 26	106	2,028	2,134	113	111	2,739	2,850	121
,, 27	86	2,395	2,481	134	91	2,604	2,695	143
,, 28	81	1,762	1,843	86	54	1,585	1,639	152
,, 29	67	1,386	1,453	55	64	1,280	1,344	45
,, 30	88	1,962	2,050	168	95	2,256	2,351	113
,, 31	60	1,102	1,162	86	57	1,365	1,422	143

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Sept. 1	68	1,300	1,368	102	69	1,231	1,300	110
,, 2	133	2,831	2,964	477	119	2,636	2,755	326
,, 3	28	813	841	198	70	1,495	1,565	310
,, 4	54	954	1,008	40	50	1,022	1,072	101
,, 5	31	771	802	29	35	1,040	1,075	38
,, 6	19	249	268	13	30	504	534	51
,, 7	24	596	620	8	17	610	627	3
,, 8	18	278	292	4	19	274	293	9
,, 9	22	734	756	20	20	668	688	3
,, 10	12	418	430	2	14	482	496	—
,, 11	12	415	427	3	14	340	354	1
,, 12	61	1,586	1,647	189	62	1,608	1,670	172
,, 13	20	661	681	16	15	699	714	31
,, 14	24	864	888	18	21	752	773	21
,, 15	32	522	554	7	22	496	518	6
,, 16	10	277	287	1	19	329	348	2
,, 17	18	275	293	1	19	306	325	—
,, 18	120	2,845	2,965	196	120	2,496	2,616	38
,, 19	41	965	1,006	24	31	1,372	1,403	149
,, 20	13	397	410	3	21	366	387	44
,, 21	41	984	1,025	7	42	896	938	8
,, 22	16	579	595	2	14	603	617	—
,, 23	13	422	435	6	9	394	403	7
,, 24	20	433	453	2	25	512	537	2
,, 25	12	312	324	1	10	258	268	1
,, 26	10	416	426	—	13	452	465	1
,, 27	218	5,037	5,255	438	207	4,363	4,570	248
,, 28	60	1,797	1,857	467	77	2,568	2,645	612
,, 29	75	1,947	2,022	221	110	2,426	2,536	152
,, 30	68	1,557	1,625	57	72	1,783	1,855	141
Oct. 1	62	1,658	1,720	70	62	1,417	1,479	46
,, 2	29	509	538	33	23	934	957	44
,, 3	15	265	280	9	13	229	242	12
,, 4	9	248	257	4	16	264	280	4
,, 5	10	333	343	7	10	326	336	7
,, 6	10	389	399	4	10	337	347	4
,, 7	11	235	246	—	9	211	220	1
,, 8	160	4,012	4,172	447	180	3,841	4,021	474
,, 9	50	1,034	1,084	198	38	912	950	224
,, 10	36	934	970	29	40	762	802	38
,, 11	46	1,096	1,142	11	55	1,146	1,201	10
,, 12	51	1,122	1,173	16	47	1,085	1,132	2
,, 13	17	389	406	25	32	922	954	37
,, 14	15	323	338	1	16	363	379	3
,, 15	11	202	213	—	4	257	261	5
,, 16	26	570	596	43	26	538	564	40
,, 17	8	236	244	2	8	278	286	3
,, 18	9	277	286	—	9	346	355	—
,, 19	12	326	338	—	8	243	251	—
,, 20	101	2,152	2,253	299	110	2,159	2,269	154
,, 21	22	410	432	32	22	788	810	162
,, 22	27	556	583	7	20	543	563	8

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans
1918.								
Oct. 23	143	3,075	3,218	241	142	3,124	3,266	216
,, 24	75	2,132	2,207	133	108	2,242	2,350	167
,, 25	26	503	529	38	26	599	625	69
,, 26	17	521	538	24	15	498	513	19
,, 27	12	401	413	1	26	468	494	2
,, 28	15	334	349	1	14	336	350	3
,, 29	8	342	350	9	9	356	365	8
,, 30	12	333	345	1	7	269	276	1
,, 31	8	177	185	—	9	200	209	—
Nov. 1	16	345	361	65	16	322	338	66
,, 2	8	305	313	21	17	296	313	21
,, 3	21	385	406	5	21	369	390	9
,, 4	167	3,392	3,559	491	204	3,537	3,741	375
,, 5	17	471	488	75	29	1,046	1,075	420
,, 6	44	797	841	57	35	774	809	128
,, 7	19	525	544	18	14	768	782	42
,, 8	45	804	849	24	45	814	859	26
,, 9	9	243	252	10	7	254	261	5
,, 10	3	37	40	2	7	65	72	1
,, 11	2	8	10	—	1	21	22	2
,, 12	—	2	2	1	1	16	17	1
,, 13	—	7	7	—	—	6	6	—
,, 14	—	2	2	—	—	13	13	—
,, 15	—	—	—	—	1	5	6	—
,, 16	—	—	—	—	—	1	1	—
,, 17	—	1	1	—	—	3	3	—
,, 18	—	—	—	—	—	—	—	—
,, 19	—	—	—	—	—	—	—	—
,, 20	—	1	1	—	—	1	1	—
,, 21	—	—	—	—	—	—	—	—
,, 22	—	—	—	—	—	—	—	—
,, 23	—	—	—	—	—	—	—	—
,, 24	—	—	—	—	—	—	—	—
,, 25	—	—	—	—	—	—	—	—
,, 26	—	—	—	—	—	—	—	—
,, 27	—	—	—	—	—	—	—	—
,, 28	—	—	—	—	—	—	—	—
,, 29	—	—	—	—	—	—	—	—
,, 30	—	—	—	—	—	—	—	—

FOURTH ARMY.

Period 6 *a.m. to* 6 *a.m.*

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Aug. 8	313	6,559	6,872	807	353	6,597	6,950	693
,, 9	189	3,117	3,306	601	245	3,974	4,219	857
,, 10	231	4,922	5,153	437	183	4,236	4,419	354
,, 11	121	2,436	2,557	185	126	3,277	3,403	410
,, 12	27	636	663	85	42	1,104	1,146	366
,, 13	32	811	843	22	22	729	751	40
,, 14	25	647	672	12	24	688	712	13
,, 15	41	1,194	1,235	1	50	1,423	1,473	6
,, 16	24	484	508	8	43	784	827	20
,, 17	21	512	533	8	20	437	457	7
,, 18	9	306	315	20	14	335	349	13
,, 19	15	394	409	—	14	404	418	—
,, 20	14	265	279	—	15	291	306	—
,, 21	9	160	169	—	10	183	193	—
,, 22	129	2,788	2,917	300	127	2,754	2,881	277
,, 23	115	2,477	2,592	445	68	1,855	1,923	386
,, 24	76	1,535	1,611	140	117	1,709	1,826	99
,, 25	116	2,895	3,011	26	121	4,095	4,216	50
,, 26	41	1,213	1,254	14	59	2,225	2,284	20
,, 27	61	1,165	1,226	62	62	1,223	1,285	55
,, 28	38	708	746	67	40	769	809	75
,, 29	34	579	613	47	27	514	541	46
,, 30	43	693	736	37	35	703	738	25
,, 31	77	1,316	1,393	201	81	1,341	1,422	213
Sept. 1	70	1,833	1,903	215	99	1,971	2,070	294
,, 2	106	2,054	2,160	149	123	2,044	2,167	178
,, 3	19	426	445	53	17	596	613	54
,, 4	10	251	261	24	7	215	222	24
,, 5	22	727	749	24	35	719	754	30
,, 6	25	460	485	16	19	471	490	31
,, 7	22	585	607	17	25	600	625	17
,, 8	14	420	434	7	19	434	453	10
,, 9	24	289	313	8	22	306	328	8
,, 10	24	289	313	8	22	306	328	8
,, 11	13	200	213	1	14	255	269	5
,, 12	8	155	163	4	3	166	169	7
,, 13	7	157	164	4	16	186	202	4
,, 14	4	95	99	—	5	79	84	2
,, 15	16	271	287	6	24	441	465	13
,, 16	12	140	152	1	11	159	170	6
,, 17	47	1,009	1,056	2	46	964	1,010	7
,, 18	209	4,640	4,849	636	210	4,946	5,156	541
,, 19	92	1,598	1,690	81	78	1,436	1,514	178
,, 20	18	649	667	10	12	596	608	16
,, 21	85	1,315	1,400	74	45	1,381	1,426	46
,, 22	9	542	551	30	22	589	611	47
,, 23	25	391	416	3	6	414	420	12
,, 24	71	1,393	1,464	125	79	1,339	1,418	90
,, 25	29	454	483	—	20	535	555	36

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Sept. 26	8	560	568	5	14	546	560	8
,, 27	22	800	822	4	22	868	890	53
,, 28	21	729	750	7	21	687	708	9
,, 29	137	4,357	4,494	244	246	6,061	6,307	192
,, 30	73	1,989	2,062	139	98	3,223	3,321	258
Oct. 1	44	936	980	45	41	1,148	1,189	88
,, 2	32	657	689	41	45	944	989	41
,, 3	140	2,416	2,556	368	161	2,592	2,753	305
,, 4	57	1,275	1,332	215	52	1,397	1,449	284
,, 5	77	1,150	1,227	117	100	1,498	1,598	144
,, 6	16	667	683	19	24	588	612	29
,, 7	17	531	548	23	19	540	559	37
,, 8	133	3,159	3,292	538	128	3,089	3,217	328
,, 9	35	896	931	51	62	1,220	1,282	379
,, 10	32	1,023	1,055	48	24	664	688	25
,, 11	30	667	697	12	33	688	721	8
,, 12	23	357	380	—	14	486	580	—
,, 13	8	260	268	—	7	224	231	—
,, 14	9	202	211	—	14	222	236	1
,, 15	15	449	464	—	10	423	433	3
,, 16	15	184	199	—	20	286	306	—
,, 17	137	3,329	3,466	252	151	3,682	3,833	278
,, 18	63	1,757	1,820	160	108	2,467	2,575	280
,, 19	17	510	527	32	11	345	356	29
,, 20	11	372	383	14	12	400	412	27
,, 21	7	310	317	1	8	304	312	7
,, 22	13	297	310	—	17	307	324	4
,, 23	71	1,827	1,898	110	78	1,763	1,841	112
,, 24	35	655	690	53	39	637	676	52
,, 25	9	337	346	3	9	277	286	9
,, 26	13	174	187	1	16	152	168	1
,, 27	6	135	141	2	6	131	137	3
,, 28	4	111	115	—	6	98	104	1
,, 29	11	147	158	—	9	143	152	—
,, 30	11	126	137	2	10	132	142	2
,, 31	8	104	112	—	9	96	105	—
Nov. 1	3	137	140	—	2	107	109	—
,, 2	7	211	218	7	7	247	254	4
,, 3	15	249	264	—	14	181	195	—
,, 4	104	2,081	2,185	276	140	2,227	2,367	137
,, 5	14	279	293	105	20	372	392	202
,, 6	12	173	185	20	8	219	227	26
,, 7	8	111	119	10	3	107	110	12
,, 8	11	328	339	1	11	277	288	6
,, 9	5	70	75	1	10	185	195	6
,, 10	—	20	20	3	2	22	24	3
,, 11	2	66	68	—	2	88	90	—
,, 12	2	17	19	—	1	4	5	—
,, 13	—	—	—	—	—	—	—	—
,, 14	—	—	—	—	—	1	1	—
,, 15	—	—	—	—	—	—	—	—

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Nov. 16	—	1	1	—	1	24	25	—
,, 17	—	—	—	—	—	—	—	—
,, 18	—	—	—	—	—	3	3	—
,, 19	—	—	—	—	—	—	—	—
,, 20	—	—	—	—	—	1	1	—
,, 21	—	—	—	—	1	3	4	—
,, 22	—	—	—	—	—	14	14	—
,, 23	—	—	—	—	—	—	—	—
,, 24	—	—	—	—	—	5	5	—
,, 25	—	—	—	—	—	—	—	—
,, 26	—	—	—	—	—	—	—	—
,, 27	—	—	—	—	—	—	—	—
,, 28	—	—	—	—	—	—	—	—
,, 29	—	—	—	—	—	—	—	—
,, 30	—	—	—	—	—	—	—	—

FIFTH ARMY.

Period 6 *a.m. to* 6 *a.m.*

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Aug. 8	21	405	426	3	15	212	227	1
,, 9	8	174	182	—	10	153	163	—
,, 10	7	166	173	—	2	78	80	—
,, 11	14	233	247	—	6	93	99	—
,, 12	4	198	202	—	3	99	102	1
,, 13	4	192	196	1	2	180	182	—
,, 14	7	133	140	—	12	157	169	—
,, 15	2	74	76	—	5	72	77	—
,, 16	1	107	108	—	2	110	112	—
,, 17	1	67	68	—	1	83	84	—
,, 18	6	61	67	1	8	43	51	1
,, 19	6	88	94	1	2	83	85	2
,, 20	2	76	78	—	3	65	68	2
,, 21	21	380	401	—	16	357	373	—
,, 22	20	384	404	—	17	320	337	—
,, 23	8	168	176	—	4	103	107	—
,, 24	3	100	103	—	7	62	69	—
,, 25	4	42	46	—	1	50	51	—
,, 26	2	31	33	—	2	25	27	—
,, 27	4	39	43	—	2	28	30	—
,, 28	2	47	49	—	2	36	38	—
,, 29	4	43	47	—	1	26	27	—
,, 30	1	37	38	—	3	27	30	—
,, 31	1	31	32	—	—	16	16	—

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.Rs.	Total.	Germans.
1918.								
Sept. 1	4	73	77	—	6	63	69	—
,, 2	1	83	84	—	—	43	43	—
,, 3	11	212	223	—	13	238	251	—
,, 4	3	137	140	2	2	146	148	5
,, 5	11	113	124	—	7	101	108	1
,, 6	3	98	101	—	1	147	148	—
,, 7	3	51	54	—	5	66	71	—
,, 8	2	38	40	—	1	41	42	—
,, 9	1	51	52	—	2	32	34	—
,, 10	1	41	42	—	2	48	50	—
,, 11	3	19	22	—	2	41	43	—
,, 12	5	43	48	—	3	53	56	—
,, 13	1	39	40	—	3	39	42	—
,, 14	4	70	74	—	3	67	70	—
,, 15	—	26	26	—	3	32	35	—
,, 16	4	59	63	—	3	59	62	—
,, 17	4	59	63	—	3	59	62	—
,, 18	4	26	30	—	2	27	29	—
,, 19	1	19	20	—	3	19	22	—
,, 20	11	170	181	3	5	68	73	—
,, 21	3	91	94	—	3	23	26	—
,, 22	9	84	93	—	3	29	32	—
,, 23	3	86	89	—	2	58	60	—
,, 24	3	73	76	—	4	67	71	—
,, 25	9	190	199	7	8	132	140	4
,, 26	4	66	70	4	8	53	61	—
,, 27	2	95	97	—	4	97	101	3
,, 28	1	46	47	1	1	48	49	1
,, 29	7	75	82	—	7	105	112	—
,, 30	12	240	252	5	10	232	242	9
Oct. 1	9	148	157	1	14	142	156	4
,, 2	8	108	116	2	15	89	104	5
,, 3	6	89	95	—	9	95	104	—
,, 4	13	237	250	—	14	332	346	2
,, 5	9	130	139	—	10	184	194	2
,, 6	2	107	109	—	3	132	135	—
,, 7	7	54	61	—	10	99	109	1
,, 8	6	99	105	—	2	32	34	—
,, 9	2	99	101	—	2	89	91	—
,, 10	3	79	82	—	3	59	62	—
,, 11	4	61	65	—	4	167	171	—
,, 12	—	62	62	—	2	51	53	1
,, 13	3	58	61	—	8	129	137	—
,, 14	7	207	214	—	7	160	167	—
,, 15	4	59	63	—	2	116	118	—
,, 16	7	60	67	—	10	79	89	—
,, 17	4	39	43	—	—	32	32	1
,, 18	1	60	61	—	2	70	72	—
,, 19	—	—	—	—	1	72	73	—
,, 20	2	91	93	—	—	13	13	—
,, 21	13	186	199	—	6	113	119	—
,, 22	6	163	169	—	11	214	225	3

Date.	Field Ambulances.				Casualty Clearing Stations.			
	Offs.	O.Rs.	Total.	Germans.	Offs.	O.s.R	Total.	Germans.
1918.								
Oct. 23	3	173	176	—	5	139	144	—
,, 24	3	93	96	—	4	76	80	—
,, 25	2	92	94	—	1	45	46	—
,, 26	2	59	61	—	1	33	34	—
,, 27	3	108	111	—	7	72	79	—
,, 28	1	119	120	—	2	134	136	—
,, 29	4	130	134	—	2	126	128	—
,, 30	6	297	303	—	8	269	277	—
,, 31	7	130	137	—	15	257	272	—
Nov. 1	2	24	26	—	5	90	95	—
,, 2	5	191	196	—	6	139	145	—
,, 3	4	162	166	—	2	79	81	—
,, 4	4	162	166	—	4	120	124	—
,, 5	3	126	129	—	2	134	136	—
,, 6	2	127	129	—	6	228	234	3
,, 7	2	116	118	—	2	106	108	—
,, 8	11	263	274	—	8	204	212	—
,, 9	2	33	35	—	9	167	176	—
,, 10	1	19	20	—	6	93	99	—
,, 11	5	52	57	—	—	40	40	—
,, 12	—	16	16	—	3	31	34	—
,, 13	—	—	—	—	—	30	30	—
,, 14	—	8	8	—	—	25	25	—
,, 15	—	—	—	—	—	3	3	—
,, 16	—	—	—	—	—	—	—	—
,, 17	—	—	—	—	—	—	—	—
,, 18	—	—	—	—	—	—	—	—
,, 19	—	—	—	—	—	—	—	—
,, 20	—	—	—	—	—	—	—	—
,, 21	—	—	—	—	—	—	—	—
,, 22	—	—	—	—	—	—	—	—
,, 23	—	—	—	—	—	—	—	—
,, 24	—	—	—	—	—	—	—	—
,, 25	—	—	—	—	—	—	—	—
,, 26	—	—	—	—	—	—	—	—
,, 27	—	—	—	—	—	—	—	—
,, 28	—	—	—	—	—	—	—	—
,, 29	—	—	—	—	—	—	—	—
,, 30	—	—	—	—	—	—	—	—

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